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## MENTAL DISEASES FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.*


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The subject assigned me may, perhaps, be regarded as rather a large order for a fifteen minute paper. We will, therefore, without further preliminaries, plunge into the subject.

In thinking of mental diseases there are four major conditions which obtrude themselves on one's consciousness; namely, insanity, epilepsy, mental-defectiveness, and the various psychoneuroses and psychopathic states that are sometimes included under one head as the semi-insane. These may, perhaps, be appropriately termed the Four Horsemen, as the devastation they wreak upon human society is so widespread, and the effects of this devastation so complete, as to be almost beyond human comprehension.

We may, with some profit to our understanding, view these effects from three main avenues of approach: first, the effect upon the individual; second, upon society; and third, the effect upon posterity.

The effect upon the individual is such as to render him often not only the most miserable of creatures, but also a total economic loss for the period of an average lifetime.

The effect upon society is usually to place the burden of his custodial care upon the State for many years.

The effect upon posterity is frequently to continue these defects from generation to generation through blood lines.

Mental diseases are so destructive and warping to the intelligence and judgment of the individual, and bear such an intimate relationship to crime that I feel justified in stating that the solution of crime lies not so much in the hands of the courts as in the hands of the eugenists. Indeed, the more brutal crimes are nearly always committed by persons who are insane, such as the sadists, the delusionally insane, or persons of low intelligence who are helpless in the thralls of their sexual urge and who, according to our eugenic principles, should never have been born. The habitual criminal, while perhaps exhibiting in many instances no marked evidences of any of the classical forms of insanity, is, nevertheless, usually a mental case. He is frequently psychopathic in all his attitudes and reactions, defective in judgment, will, and sensibility, and constitutes one of the great problems of our courts today.

Mental defectives and psychopathic personalities constitute a considerable proportion of the inmates of our penal institutions at this time. With a few exceptions they are petty criminals, the males engaged in theft and the females in prostitution, and are usually paupers in the generally accepted meaning of the word. Sometimes when influenced by more intelligent criminals, or acting under sadistic impulses, they come before the courts charged with graver crimes, such as rape, homicide, or highway robbery.

The obligation of the general practitioner as a guardian of the public health imposes upon him a certain duty both to the defective individual and to his social order. His duty to the defective individual is that of protecting him from himself; and that to society, of protecting society from the defective individual.

The physician should, therefore, be alert in the recognition of these abnormal or subnormal persons in his community in order that they may be properly identified, and, if necessary, placed under custody for the protection of society and posterity. Under custody, the individual may be studied with reference to his traits and detained a sufficient length of time for the performance of eugenical sterilization, or permanently if his condition is such as to require permanent custody.

May I take a moment of your time to discuss briefly a few of the major mental cases that

*Read before the Lynchburg and Campbell County Medical Society, in Lynchburg, Va., on April 23, 1931.

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may come under your observation from time to time?

You are all familiar with the fairly successful business man of your town or community who has been generally regarded as a safe and conservative person in his business dealings, though perhaps always a little too talkative, a little too exuberant, a little too optimistic. Often, quite suddenly he begins an orgy of the wildest speculation; he is possessed of seemingly inexhaustible energy; he is mentally quite alert, but his judgment seems suddenly to have gone bad. His hard-earned savings, accumulated through years of conservative operation may be dissipated in a few weeks or a month, and he may bring his business to bankruptcy and his family to pauperism, still hoping to the last that some wild venture will bring him great fortune. He may proceed blithely along this primrose path for weeks or months, and then suddenly, without much warning, slump into the most desperate despondency and close the chapter by suicide or widespread homicide in his family. Now this person is afflicted with manic-depressive or circular insanity, which, in turn, he is transmitting to his offspring in some form or another of mental disease or deficiency. It recurs steadily and regularly in generation after generation of a single family line.

You are all equally familiar with the preternaturally bright boy or girl, who at the age of puberty, young manhood or young womanhood, becomes abnormally shy and seclusive. This person had always been regarded as perhaps a little odd, but this was charged up to the brilliancy of the intellect on the theory that all geniuses are supposed to be queer. The seclusion and shyness deepens until finally the individual becomes almost completely introverted. There is a disassociation of ideas; the language becomes disconnected and fragmentary, and there is a lack of continuous thought; new words not in the dictionary are formed; or sentences without apparent meaning are repeated over and over for days at a time. The patient either sits stereotyped and stuporous in one position, refuses food, and becomes mute, or moves about rapidly in wild, automatic, and meaningless activity, often repeating the same movement over and over again. He hears voices calling to him out of the Heavens, often the voice of the Almighty directing him to perform certain acts; he has vision of the angels, the devil, or of strange and peculiar creatures. He thinks that his food is being poisoned anl refuses to eat, that he has snakes in his stomach which are awaiting a favorable opportunity to strike the fatal blow. He is subject to the constant application of electrical energy from some supernatural power. Such cases are usually orientated as to time and place. They know who they are, where they are, and are familiar with persons and objects about them; and, as the name of the disease, schizophrenia—split mind—indicates, they are living half in the world of reality and half in a world created by their fancies and imaginations. Frequently the delusional ideas of these people become fixed with reference to a particular person or persons. They are then regarded as paranoidal, are frequently dangerous, and often homicidal. They may believe that a certain person or group of persons is seeking to torture them or put them to death, and the longer they consider this proposition the more fixed the delusion becomes, until finally the paranoidal schizophrenic, in the utmost desperation, slays one or a number of persons to save himself from what he thinks is certain destruction, the commission of the crime in his deranged mind being fully justified by the chain of delusional events that led up to it. Schizophrenia alone is extremely common, and constitutes the largest single group in our State hospitals today. A large percentage of these cases undergo complete mental deterioration. A few have temporary partial recoveries, but are always subject to recurrence. There is an average of one insane person to every three hundred of the general population.

In the epilepsies we have another large group of chronically afflicted persons in whom the hereditary factor is the strongest and most usual predisposing agent, there being about one epileptic to every five hundred of the general population. The disease is not difficult to recognize and usually diagnoses itself. Only a small proportion of the cases are susceptible to cure, and these only in the class of symptomatic cases in which some pathological condition exists, such as brain tumor or skull pressure that can be removed. Some preventive work has been done in babies having convulsive disorders, following prolonged birth, by spinal drainage, repeating the operation several times until the spinal fluid returns clear. But

whether or not these cases would have developed epilepsy no one can tell, as it is a well established fact that two similar pathological conditions of the same size and location in the brains of two persons may produce a convulsive disorder in one without any similar reaction in the other.

We must, therefore, go further back into the finite structure of the nervous system, and postulate a structure that is hereditarily susceptible to irritating factors within or without the body for the production of by far the larger majority of our epilepsies.

The epileptic is a great menace to those about him and to posterity. As his disease progresses he becomes morose, irritable, egotistical, suspicious, unwilling to take advice, or subject himself to discipline even for his own welfare. He is given to violent explosions of anger, periods of mental cloudiness, automatic states in which he may slay those about him and have no recollection of his act. He is usually an economic failure, and in most instances, therefore, sooner or later becomes a charge upon the State. He can be somewhat benefited by properly selected institutional treatment, and his disease may be held in abeyance for some years, but the progress of his disease is nearly always downward, and if he lives to even middle age, he usually becomes a total dement. Epileptics, as well as the insane, often marry early in life and beget defective families, which in turn become public charges.

In the psychopaths and psychoneuroses we have an extremely large class of persons who never bear their full share of the responsibilities of life. Many of the psychoneurotics become totally dependent upon their families, friends or the State. They have all sorts of imaginary ailments, are a constant nuisance and disturbing factors in many households. They are not only non-productive themselves, but must absorb for their selfish interests a certain amount of the efficiency of the other members of the household. They frequently live to a good, old age, having successfully warded off the strain of competition in living and blithely shifted it to some other member of the family. They frequently marry, and in the ascending branches of the family we find epilepsy, insanity, or feeble-mindedness springing from these neurotic parents.

As a matter of fact, inheritance is not always similar. We find the insane producing the epileptic and the epileptic producing the insane, and the neurotic or psychopathic person producing one or the other of these mental abnormalities or subnormalities.

The constitutional psychopath is a great shifter of burdens. He is often physically strong and healthy, and of sufficient intelligence to earn his own livelihood, if he would do so. He is, however, unstable in his personality and extremely untruthful and unreliable in every respect. He is usually without pride, except as to his personal appearance, in which he may be most fastidious. He is superficial and shallow, and imaginative, and will spin the most remarkable yarns, which have no basis in fact whatsoever. He will lie under oath, without qualms to his conscience, and he constitutes a most perplexing problem to our courts. He is dishonest and usually without regard for property rights of others, and I assure you, gentlemen, that against any opinion to the contrary, neither environment nor the wisdom of experience will change him one iota. He is often definitely criminalistic, and being a gifted liar with a not unpleasing personality gets by for a number of years. If apprehended and punished for his misdeeds, he, upon his release from custody, immediately begins the pursuit of his old life. He passes through the world a burden and a problem from the day that he is put into swaddling clothes until the last sad words are spoken over his recumbent form.

The feeble-minded, whom you know quite well, constitute by far the largest class of all mental cases, there being about one in every two hundred of the general population. These subnormal individuals have a maximum intelligence quotient of approximately 70 per cent, and range from that on down to idiocy. There are two definite types that I have chosen to design as the benign and the malignant. The benign have no marked anti-social traits, are pleasant in expression and demeanor, are usually willing workers under supervision, are good tempered, but if left to themselves will do nothing. They cannot plan, look ahead, or manage their own affairs with intelligence or judgment. They are at their best in the simpler forms of manual labor, in household work, shops, or farms; and if properly placed, they usually work willingly and with interest.

The malignant type, on the other hand, have

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strong criminalistic tendencies. They are lazy, shiftless, and thieving; and have a tendency to wander about. Many of the women of this type become prostitutes. They are often degenerates or sexual perverts, and they constitute a serious problem at home or abroad. They may be improved under discipline, but frequently go back to their old habits of living when on their own resources. Mental deficiency is highly hereditary; we see it running through families for many generations, and by reason of its widespread dissemination amongst certain classes of our people, it constitutes one of the gravest problems that we must face today.

The financial strain on those who are bearing the burden is becoming extremely heavy. It may surprise you to learn that for the fiscal year ending June 30, 1930, there was expended on dependents, delinquents, and defectives by the State of Virginia, $5,765,478.61; by cities and counties in the State, $1,553,487.14; by private agencies in the State, $4,008,025.83, or a total of $11,326,991.58. These figures were compiled by the Department of Public Welfare, and I assume that they are correct.

In closing, I cannot refrain from mentioning a program in which we can all participate in an effort to eradicate this cancer from the body of our people.

First, such cases must be identified and brought to public notice; second, we should have larger institutions in order that, when identified, they may be brought under institutional control for the purpose of eugenical sterilization: this in particular applies to the institution for epileptics and feeble-minded (we are not doing one-fifth as much eugenical sterilization work as we should do). Third, certain amendments to the marriage laws taking into consideration the eugenic problems should be made; fourth, there should be a better social control of the defectives at large. Intelligent people should be alert to recognize situations in human relationships which are likely to be productive of defective progeny.

Some progress has been made along these various lines, and a preventive program today looks much more hopeful than it did a few years ago, but there is much yet to be done, and many years will elapse before the program can be brought to anything like a successful conclusion.

## THE SMALL TOWN HOSPITAL.*

By BEVERLEY F. ECKLES, M. D., Galax, Va.

### Origin

I do not know the origin of the small town hospital, but I suspect that it was an evolutionary result of those same forces that caused the first hospital to be created, being a natural consequence of the increasing need for and appreciation of hospital facilities.

I do not think it fair or just to credit the founder of a small hospital with less altruism, public spirit, or good faith than is claimed for those who have builded greater institutions serving a larger clientele.

I prefer to believe that the small town hospital exists as a merciful attempt to satisfy a widespread and insistent human demand, rather than as a commercial venture, since it is axiomatic that very few properly run hospitals make money, and that the same amount of thought, energy, and care necessary to successful hospital administration will bring far greater financial returns in any other sphere of human endeavor, except perhaps in the affairs of the Church.

### Need

That there is a desperate need for these small refuges in a sea of troubles I am convinced, for during the past two years I have seen a number of patients who would certainly have died had it not been for one such hospital.

Some of these were cases in which the time element was of vital importance; others, deeply prejudiced, were only moved to action by a personal acquaintance with the hospital and a conviction of impending personal death.

Useless to talk of sending these people here or there—they simply could not have been sent, for they stoutly maintained, even with their lives, that they would rather bear the ills they had, than fly to others that they knew not of.

Not all of those so stricken escaped with their lives, but each brand plucked from the burning was a distinct achievement.

Many of them have become true believers; and some, proselyting evangels.

That the demand for the small hospital is national is abundantly evidenced by the great number of them that have sprung up throughout the land in recent years, forming one of the significant facts of present day medicine.

*Read at the meeting of the Southwestern Virginia Medical Society, at Wytheville, Va., March 19, 1931.

It is not probable that this growth would have taken place unless these institutions do perform some necessary function in a satisfactory manner; for modern life is ruthlessly practical and unless a new thing can show that it is useful, it is doomed.

The purpose of this paper is to offer in outline a personal view of the functions, opportunities, and limitations of a small town hospital, based on an intimacy of over two years, against a background of fifteen years spent as practitioner, teacher, and member of a strong group in our largest city.

### Financial Aspects

The financial problem is a considerable one in any small hospital. The income from purely hospital facilities is rarely sufficient for its needs. The deficit is made up in one or more of several ways. Some hospitals are endowed; others are operated by large corporations primarily for the care of their employees; still others receive donations or allowances from their communities; a few are underwritten by large philanthropic organizations such as the Commonwealth Fund; and in another group it is necessary to use a portion of the professional fees collected for services rendered in the hospital. Often enough, as the great Samuel Johnson said of a dog walking on its hind legs, it is not a question of how well it is done, but the wonder is that it is done at all.

Charity cases are an ever present problem solved in various ways that depend largely upon local conditions. We are particularly fortunate in that our hospital has always enjoyed the confidence and cooperation of the authorities of the town and the two counties from which most of our patients come.

The reckless, irresponsible driver of the rattle-trap automobile along our highways furnishes an especial kind of trouble; and I, for one, devoutly hope that our next legislature will pass a bill making it obligatory upon all who operate automobiles to carry some form of adequate insurance against property damage and personal injury.

### Relationship to Patients

Every hospital has a serious responsibility to its patients—a responsibility both economic and professional. It must see that the patient gets full value for every dollar charged, and that the charges are reasonable and just. It must also insist that the patient take his part of the financial transaction seriously, and either discharge it in full or make satisfactory arrangements to do so.

Professionally the small hospital has an unusual opportunity to inculcate the general ideas of personal hygiene, cleanliness, and prevention of disease. It should emphasize these details so that each discharged patient will not only be better for having entered there, but will take home and put into practice the new ideas gained by his hospital experience.

A humane interest in the patient should be cultivated and every legitimate means employed to gain his confidence and cooperation, for often he is ignorant, suspicious, and badly frightened. To be regarded as a case rather than as a fellow human in trouble will nullify many of our most zealous scientific attempts at his relief; while a real and lively interest in the humanities will lend great aid to everything that may be done for him.

The small hospital should never be a proving-ground and an experimental laboratory for an inexperienced, ambitious surgeon. Between a surgeon and one who just operates there is a great gulf fixed.

A grave sense of personal responsibility and accountability; an alertness against any tendency towards exploitation of our patients; an accurate knowledge of our limitations and an unwillingness to be lured beyond them; and a faithful adherence to the letter and the spirit of our oath as members of the American College of Surgeons, that we will "practice our profession with restraint" are fundamentals in the creed of every true surgeon.

Nor should the small hospital indulge in testing the merits of new and radically different therapeutic procedures. These had best be left to larger and better qualified institutions to investigate and appraise; while we, with open minds, follow Pope's old and wise advice that we

"Be not the first by whom the new is tried
Nor yet the last to lay the old aside."

### Relationship to Community

The small hospital has a large opportunity for community service. It should be the servant of all, without regard to race, creed, color, or social status. It stands as a light-house of healing, and as a school-house in which the elements of hygiene, sanitation, and preventive

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medicine are practiced and taught. It may properly and enthusiastically enter into the community health program, endorsing and supporting every proper movement for the conservation of health and life. A small corps of nurses available for duty outside the hospital as obstetric aides or for general duty in the home will not only prove financially profitable, but will be of great assistance to the local physicians, and will exert a powerful influence in demonstrating practical nursing and the proper care of the sick. Every legitimate means should be employed to overcome the prejudice towards hospitals that is still frequently encountered, and to cause the community to think and to speak, not of "that" hospital, but of "our" hospital.

### Relationship to Physicians

In its professional relationships the small town hospital enjoys a happy situation. It should be the staunch ally and supporter of the varied programs of its local and State Health Boards. Its contact with the surrounding physicians is intimate, and should be conducted upon the highest ethical plane. I believe it is almost impossible to practice medicine in this day without some hospital connection, and that such a connection has an elevating effect upon the general level of practice. The opportunity to see a diagnosis confirmed or disproved at the operating-table; the use of the clinical and X-ray laboratories in diagnosis and prognosis; observing methods of treatment and matters of technique in use at the hospital, all exert a beneficial influence upon the thought and practice of the individual.

The hospital owes it to the referring physician to keep him informed as to the condition of his patient; and upon discharge, the case should be placed under his care for any necessary post-hospital treatment.

The hospital should be a leader in that form of post-graduate study, both within and without its staff, in which the pupils, as Osler said, out of their varied experience instruct each other.

It should encourage and aid in every proper way the attempt of members of its staff to perfect themselves in any of the specialties of modern medicine.

Staff meetings to which all physicians are welcome should be held regularly and often; at which a critical review of recent cases should be held and every attempt made to improve the professional and general services of the institution.

### Relationship to Other Small Hospitals

Many conditions are problems common to all small hospitals, though they are matters of no concern to larger groups. I heartily endorse the suggestion of our colleague, Dr. J. M. Shackelford, of Martinsville, that those of us who are interested in the management of these small institutions might very profitably gather from time to time for their discussion, that each might give the other the advantage of his experience.

### Limitations and Functions

The small hospital contains in embryo the germ of each of those specialties that reach their full development in the large, highly organized, modern group. It is not practicable, nor indeed is it necessary that the smaller institution try to compete with larger ones in the completeness and variety of services it offers. It should be able to make and interpret the more common tests in its clinical laboratory, and should have X-ray equipment and personnel sufficient for the usual diagnostic and therapeutic procedures. Parenthetically, X-ray interpretation should be in the hands of a physician, not a technician. It should provide its patients with clean, airy, comfortable quarters; good, suitable food; perfect sanitation; efficient and sympathetic nursing; and careful, thorough, painstaking and constant medical supervision. These constitute the irreducible minimum of requirements for its proper existence.

Tissue diagnosis; the use of Radium; many uses of the X-ray; all but the simplest and plainest diseases of the eye, ear, nose, and throat; many orthopedic, urologic, and dermatologic conditions; and those perennial unfortunates who often enough successfully defy the united diagnostic efforts of our very largest centers are illustrative examples of what is ordinarily beyond the capacity of the staff of the small town hospital.

But if these are all subtracted there remains a sphere of wide usefulness. Industrial and traumatic surgery; general surgery as general as the experience and conscience of the surgeon; obstetrics; and many conditions in the

realm of internal medicine are only a few of the fields still left open to the small hospital. In addition, one of its important functions is to serve as a sorting-station for those cases outside its power to treat. Often with proper encouragement and direction these patients will go where help may be had, and their hopeless resignation may be transformed into useful activity.

### Relationship to Large Hospitals

The relation between the small hospital and the large is not a competitive but a cooperative one, resembling that between an evacuation hospital and a base in the organization of an army. The small hospital serves a clientele that the larger one can never hope to reach. It is definitely limited by its clinical opportunities as to the type and variety of service it can render. It would be a scandal if our largest institutions were no better equipped or no more able than our smallest to care for those thousands who demand special apparatus, specialized knowledge, or far-reaching laboratory studies for their diagnosis and relief.

A sympathetic understanding, cordial cooperation, and mutual respect between the small and the large hospital seem to me not only possible but necessary if each is to attain its maximum of service. Such a relationship will establish the functions, mark clearly the limitations, and broaden the opportunities of both for serving well their day and generation. We, of the outposts, shall obtain our inspiration and encouragement from observing and following the advanced footsteps of our older brethren; and on our part may occasionally furnish a fresh viewpoint or some practical observation that may prove valuable and stimulating. In such an environment one can truly practice his profession as an art, and can bring into the realm of the work-a-day and practical that beautiful spirit of Kipling's ideal, when

> "Only the Master shall praise us,
> And only the Master shall blame;
> And no one shall work for money,
> And none shall work for fame.
> But each, for the joy of the working,
> And each, in his separate star,
> Shall paint the thing as he sees it
> For the God of things as they are."

## ATYPICAL PROBLEMS IN THE INJECTION TREATMENT OF VARICOSE VEINS.*

By EUGENE LOWENBERG, M. D., Norfolk, Va.

It is planned in this paper to discuss atypical problems and special points in the treatment by injection of varicose veins and of ulcer cruris of varicose vein origin. As an introduction to the subject, a brief resumé of current concepts concerning varicose veins and accepted procedures of the injection method is given.

Normal Anatomy: The venous system of the lower leg consists of two portions, the deep and superficial. The deep veins are situated among the muscles and the bones. They form the popliteal vein which is continued upwards as the deep femoral. The superficial system consists of the long and short saphenous, the former beginning at the inner side of the foot, extending upwards to join the deep femoral, two inches below Poupart's ligament; the latter commencing in the calf and entering directly the popliteal of the deep system. The superficial veins are connected with the deep by communicating veins, many in the lower leg, two or more in the thigh. All of the veins are supplied with valves with cusps arranged to maintain the upward position reached by the column of blood. The valves of the communicating veins normally allow the blood to flow from the superficial to the deep veins. It is noteworthy that there are usually valves located at the entrance of the long saphenous into the femoral and the short saphenous into the popliteal.

Pathological Anatomy and Physiology: The word "varicose" is derived from the Latin "varicosus" and means "dilated." The deep veins of the leg being supported by surrounding structures rarely give way, but the superficial unsupported systems, possibly hereditarily predisposed, readily enlarge when subjected to factors of pressure, obstruction and infection. Associated with the dilatation is an incompetent condition of the vein valves, so that the intravenous pressure is raised abnormally high and the flow of blood is retrograde in the upright position. Blood passes down instead of up the long saphenous, then through the communicating veins of the lower leg into the deep system, up through the deep femoral to the thigh, only to spill over through incom-

*Read at the sixty-first annual meeting of the Medical Society of Virginia in Norfolk, October 21-23, 1930.

I

SPECIAL EXAMINATION, CIRCULATORY DISTURBANCE OF LOWER EXTREMITIES

HISTORY

**Pertinent to venous circulation (varicose veins)**

Time of onset
Possible cause
Symptoms
Ankle or leg swelling
Superficial phlebitis
Milk leg
Elastic stocking
Drug dyscrasia

**Pertinent to arterial circulation (arterio-sclerosis; Buerger, Raynauds Disease**

Foot or calf fatigue
Paresthesia
Reaction to exposure to cold
Reaction to injury

PHYSICAL EXAMINATION

**Venous circulation**

Description of varices
Size ____ Type
Location
Veins on tibial surface
Veins on knee-joint
Size of long saphenous in thigh
Miscellaneous
Trendelenburg's test
Perthes' test
McPheeters percussion pulse transmitted
Direction of blood flow in isolated varices

**Arterial circulation**

General appearance
Color in dependent position
Skin temperatures
Edema
Pulsation in Dorsalis Pedis ____ Posterior Tibial ____ Popliteal Artery
Blanching on elevation
Samuel's test
Angle of circulatory efficiency

SPECIAL TEST, ARTERIAL CIRCULATION

Starr's histamine reaction
Intradermal salt test
X-ray of arteries

CONCLUSION

Fig. 1.

petent valves into the saphenous and down again. The venous dilatations vary from enormous phlebectasias to tiny "hair" or "spider" varices. The most common forms are the saccular or the sinuous. Varicose veins are practically always progressive in nature, beginning in most instances in early adult life and becoming larger from year to year. Their presence, therefore, usually calls for treatment. When, in addition to the vicious cycle above described, the communicating veins in the lower leg give way, blood stasis develops, the flow of blood being reversed in both the superficial and deep systems and ulcer formation is the inevitable result.

THE INJECTION METHOD OF TREATMENT: Varicose veins were treated as early as 1853, by the injection into their lumen of coagulating substances. However, the present method of using sclerosing rather than coagulating solu-

tions has developed during the past twelve years, mainly through the efforts of Linser, Sicard and Nobl. Clinical and laboratory experiments have repeatedly demonstrated that the solutions commonly used today produce an organized clot, firmly connected by fibroblastic tissue to the inflamed intima. This clot is absorbed and the vein obliterated by a sclerosing chemical venitis. Many thousands of cases have now been treated by the method. The mortality is placed by McPheeters, in a study of 53,000 cases, at .0075 per cent. This is to be contrasted with an average mortality of ½ to 1 per cent of the operative method and the natural high morbidity of untreated varicose veins. With regard to recurrences, Kilbourne, in almost 35,000 cases treated by the injection method, noted recurrences in only 5 per cent as compared to an average return of the varices in 20 to 30 per cent following the operative method.

The Solutions: The chief solutions being used today are equal parts of 30 per cent sodium chloride and 50 per cent dextrose, 15 to 20 per cent sodium chloride, 50 per cent dextrose, 50 to 75 per cent invert sugar, 20 to 40 per cent sodium salicylate, and 10 per cent quinine with urethane. The sodium chloride and dextrose mixture is the most universally useful, being prompt in action and nontoxic. The cramping and danger of necrosis are less than with sodium chloride alone. In practice, all solutions are kept on hand and that used which seems to suit best the individual case,—sodium chloride and dextrose for the general run of cases, glucose or invertose for the smaller or hair veins, sodium chloride or quinine and urethane for the diabetic, sodium salicylate or quinine and urethane for the more resistant veins. Note that this latter solution has the disadvantages of liability to cinchonism and anaphylactoid reactions. It should be used with caution and only after being assured by the patient that he knows from past experience that he can take quinine with impunity.

Position of the Patient: For the first treatment I prefer to have the patient sit on the end of the operating table with the legs resting on a stool. This prepares for syncope which occasionally occurs until the patient gets used to the injections, due more to the idea of a needle than anything else. Future injections are made in that position which renders the vein most readily and surely needled, either standing, sitting or prone. Many of the smaller varices cannot be safely injected save with the patient standing, while some of the larger veins require the recumbent position. In either position, the principle is to bring a concentrated solution into direct contact with a limited portion of intima; therefore, all injections are made into a segment isolated between two of the fingers or between two tourniquets. The technique of the injection is simple: the vein is entered with a short beveled 23 to 25 gage needle, the calculated amount of solution is injected, and held within the isolated segment for several minutes, the needle is withdrawn and pressure over the site of the puncture is maintained for 48 hours with a dental pad and adhesive. From time to time during the injection the plunger is slightly withdrawn to make sure by the flow of blood that the infiltration is still intravenous. The patient is requested to wear an elastic stocking or elastic bandage during and for three weeks after the treatments, the pressure hastening the organization and absorption of the thrombosed veins.

Complications: There are chiefly: perivenous infiltration with slough formation, acute inflammatory thrombosis, ascending thrombosis, persistent induration of the obliterated veins, and pruritus. With the proper precautions the slough should rarely occur. The acute pain and redness that develop after a slight false injection can usually be caused to subside without going on to necrosis if large warm compresses of magnesium sulphate or normal saline solution are begun early and kept up continually for 48 hours. Should a slough occur, it is very necessary to apply sterile dressings frequently until the process is well localized. Then the use of an organic digestant, such as enzymol, will help considerably in resolving the necrotic material and promoting healing. The acutely inflamed thrombus is greatly helped by light adhesive supports and a pressure pad higher up on the vein. Ascending thrombosis stops *per se* at the saphenofemoral junction or may be stopped before then by the application of a pressure pad several inches above the thrombus. Persistent induration is softened by mild applications of olive oil or mercurial ointment; pruritus is helped by tar salves or the X-ray. So much for the usual procedures in the injection method.

In order to further individualization in the

II

TYPE AND AMOUNT OF SOLUTIONS USED FOR INJECTING VARICOSE VEINS*

| | Solution | Maximal Amount at One Injection, Cc. | Advantages | Disadvantages | Indications for Use |
|---|---|---|---|---|---|
| 1 | 15-20% sodium chloride | 10 | Nontoxic; prompt action | Marked cramping; danger of necrosis | In large, thick veins; preferable in combination with dextrose |
| 2 | 50% dextrose | 20 | Nontoxic; no slough; slight cramping | Not irritating enough for larger veins | For smaller, thin walled veins |
| 3 | 30% sodium chloride and 50% dextrose, equal parts | 10 | Nontoxic; prompt action | Marked cramping; necrosis only if large amounts are injected beside the vein | Most universally useful; combines the advantages and reduces the disadvantages of solutions 1 and 2 |
| 4 | 50-75% invert sugar | 10 | Nontoxic; slight cramping | Too viscous; needs large needles; causes marked perivenous edema | May be used instead of dextrose |
| 5 | 20-40% sodium salicylate | 5 | Prompt action | Very painful; danger of necrosis; salicylism | Generally useful with caution |
| 6 | 10% quinine with urethane | 2 | Prompt action; rapid cure; painless | Cinchonism; anaphylactoid reactions; danger of necrosis; great deal of pain | Resistant varices; test for individual susceptibility |

*Reprinted from the Pamphlet of the Varicose Vein Committee of the A. M. A.

Fig. 2.

treatment, each case has been studied as follows: routine history and physical, special history and special physical examination. Advanced cardiac, nephritic or cardio-vascular disease are contraindications to the treatment, lest the injection be blamed for a coincidental progression in illness. Diabetes calls for special injection solutions. Marked focal infection requires attention before vein treatments are begun lest metastatic phlebitis result. Pregnancy is a relative contraindication in that many varices disappear thereafter. The special history includes the following: symptoms attributed to the varicose veins, time of onset and possible cause of the varices, other extremity pains such as intermittent claudication, foot ache, paraesthesia, joint pains, whether an elastic stocking has been worn and if so with comfort, whether any of the veins have recently been inflamed, whether there has ever been "milk leg," and any known history of susceptibility of the patient to the drugs being considered. The special examination of the limb includes a description of the varicosities, their location and size, their relationship to the ankle and knee joint, and the tibial surface, the directness of their connection with the long saphenous and the relative dilatation of the long saphenous as it climbs the thigh. The soft parts are then examined for edema, the joints for arthritic changes, the feet for fallen arches. The examination is completed with certain tests of the venous and arterial circulation: 1. The *Trendelenburg test*, in which the limb is elevated till the veins are collapsed, pressure is made in the groin, the leg is lowered. If, when the pressure in the groin is released, the blood is observed to gush downwards, the long saphenous is truly varicosed and its valves incompetent; if, before the pressure in the thigh is released, the veins fill up shortly from below, the valves of the communicating veins are incompetent; 2. *Perthes' test* (modified), with the veins well dilated in the standing position, the blood-pressure cuff is applied about the thigh and the patient asked to walk about for a few minutes. If the varices diminish in size, the blood has been aspirated through the communicating veins into the deep veins and it is demonstrated that the deep veins are patent; 3. A somewhat similar test is to apply an *elastic bandage*

about the leg and have the patient *walk* continually for 30 minutes. If the deep veins are occluded, painful symptoms in the limb result from the total obstruction of venous return; 4. *Palpation of the dorsalis pedis* and tibialis anticus for pulsation. Other tests of the arterial circulation occasionally required are described later.

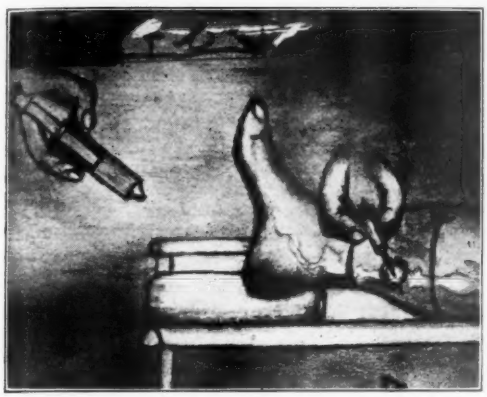

Fig. 3.—Method of aspirating and injecting larger varices.

In a given series of cases in the injection method, very few patients present identical pictures. I shall endeavor to describe some of the variations as seen in my own practice and to give the treatment accorded the atypical problems. Apology is made for the subgrouping, for it is realized that what has seemed atypical to me may be typical to another worker in this field.

*The Exceptionally Large Varix:* I refer to a saccular varicosity, one to several centimeters in diameter. Such veins will frequently withstand repeated injections made in the ordinary way. The horizontal position then becomes the method of necessity. Using a somewhat larger gage needle and a 20 c.c. syringe, the vein is entered between two tourniquets and the isolated segment aspirated almost free of blood. The syringe is then detached and a second syringe containing the sclerosing solution is connected in its place, extreme care being taken not to move the needle during this manoeuver. As a further precaution, a few drops of blood are again withdrawn into the syringe and the sclerosing solution slowly injected. It may happen in spite of this technic that glucose and sodium chloride fail to obliterate one of the large veins, in which case quinine and urethane, or strong sodium salicylate solution is used. There are several especially constructed two-way petcocks on the market, intended to facilitate aspiration and

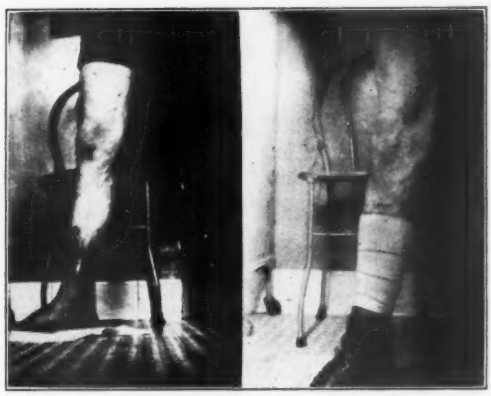

Fig. 4.—After and before treatment. Large vein at knee joint level.

injection of the vein without going through the syringe exchanging manoeuver, but in my own experience they are anything but satisfactory.

*Great Dilatation of the Long Saphenous at the Knee Joint Level:* Early experience taught that injections at this level were frequently followed by a rather severe inflammatory reaction, the obliteration of an unexpectedly long segment of vein and occasionally by a progressively ascending thrombus. During the first day or so of the acute reaction, pain would be so extreme as to force the patient to bed and, as the inflammation subsided, the vein became a contracted tender cord, which for a week or so limited the motion of the knee.

*Case 1.* Mr. M.: Varicose veins of the right leg for 12 years, with recurring ulcer cruris. The long saphenous was moderately dilated from the sapheno-femoral junction to a few inches below the knee, with many smaller varicosed branches in the lower leg. One large branch led directly to the ulcer and the first injection was made into this with complete local obliteration and appreciable benefit to the ulcer. Three days later, with the patient in the standing position, the long saphenous was injected below the knee between the spread fingers, about 1 c.c. of quinine and urethane being used. Within twenty-four hours there was marked inflammation over the injected segment, with evident thrombosis of the vein.

The patient was forced to bed for a week, during which time the inflammation subsided, but the thrombus gradually ascended to the mid-thigh. The patient became ambulant again at that time and this apparently stopped the upward spread of the clot. Ten days later he presented himself at the office with pain in the groin and examination revealed complete thrombosis of the sapheno-femoral junction. There was no temperature, no edema, and the leg ulcer was healed. The patient was allowed to continue up and in a few days all pain was gone. He has remained well.

Two other cases in my series reacted to injection of large dilatation of the saphenous at the knee level with acute inflammation, painful, contracted cord, and ascending thrombus. In these the pain in the inflammatory area was markedly alleviated by adhesive supporting, and the upward spread of the thrombus was effectively stopped by the application of a pressure pad in the thigh. These patients were encouraged to remain ambulant, which may also have been a factor in stopping the thrombus. The tendency of these varicosities to severe reaction is probably due to the added injury of joint motion. The three experiences noted above led me to adopt the following plan for such varices: Inject segments well below and above the knee joint, using relatively small amount of solution in doing so. At a later sitting inject the narrowed vein between the obliterated segments.

I might add here that many writers, and particularly McPheeters, do not fear progressive ascent of the thrombus, feeling that this never goes beyond the sapheno-femoral junction, and that complete obliteration of the vein to this point is desirable. Though this is undoubtedly true, I feel safer in stopping by pad pressure an unusually rapidly climbing thrombosis. Of the seven deaths attributed to the injection method by McPheeters, one reported by Lambott was due to deep femoral thrombosis, twelve days after the long saphenous had become thrombosed at the fossa ovale.

*Varicose Veins over Bony Prominences:* I refer to varicosities over the anterior surface of the tibia or over the patella or ankle bones, where there are but scant soft parts between the veins and the bone. The thrombosed vein in these sites is apt to be very superficial and quite painful. It is therefore advisable to adopt the procedure previously described; inject the part of the varix to either side of the bony prominence and then get the center segment with a small amount of solution. Should a chronically indurated area ever occur, the gentle application of 33 per cent mercury ointment, or of olive oil is of benefit.

*Marked Varicosities of the Long Saphenous High in the Thigh:* Most authors agree that it is safe to inject as high as the mid-thigh, but opinion is divided with regard to varicosities above this level. McPheeters states that they are no exception to the injection method and he does not hesitate to treat them, while De Takats advocates ligation of the long saphenous just below the sapheno-femoral junction and subsequent injection of the varices that remain. De Takats makes this ligation

Fig. 5.—Right. Ulcer showing feeder vein. Left. Leg ulcer of long duration fed by blood sinuses in indurated tissues required Kondoleon operation and skin graft.

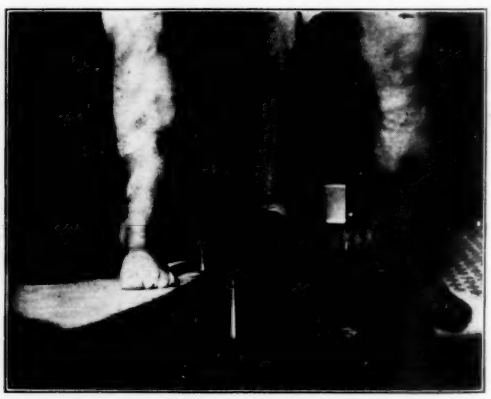

Fig. 6.—After and before treatment. Long saphenous was tied off in thigh and injected.

a simple ambulatory procedure, cutting down on the vein under local anesthesia and allowing the patient to go home the same day. Personally, I have tried to divide the cases into two groups; those presenting many short isolated and saccular varices, and those in which the long saphenous is a more or less straight dilated tube, the greater dilatation being upward. The small varicose segments of the first group are readily and safely injected between tourniquets with small amounts of solution. For the second group, preliminary ligation is the method of choice for three reasons; first, to avoid the possibility of ascending thrombosis; second, to shorten greatly the period of subsequent treatments, and third, to lessen the possibility of recurrence to which this class of cases is predisposed because of recanalization by the enormous downward venous pressure. To date I have found it advisable to perform ligation and division of the long saphenous in the thigh, using the ambulatory method of De Takats in two cases.

*Case 2:* Recurrent varicose veins following a radical operation eleven years previously. In addition to many large varicosities in the calf and to two large ulcers on the anterior aspect of the leg, there was marked cylindrical dilatation of the large saphenous from the lower thigh upward. Just below the fossa ovale this formed an enormous saccular dilatation the size of a baseball. The vein was ligated and divided under local anesthesia just above the sacculation and the patient allowed to go home from the hospital the same day. Five subsequent injections completed the cure.

*Case 3:* Both legs almost completely covered with large sinuous and serpentine varicosities, the only difference being that, in the left leg, the long saphenous was markedly dilated from the knee upward, the greatest dilatation being above. The Trendelenburg test was markedly positive in this leg, the downward venous pressure being enormous. Twenty-two injections were required for the right leg. Ambulatory ligation was done on the left leg and eight injections sufficed to obliterate any remaining varices.

*Phlebectasias:* These enormous cavernous masses consist of a network of intercommunicating dilated veins, structurally resembling angiomata. As they are with difficulty emptied, they are not ideal for the injection method, it being hard to get the sclerosing solution into them in needed concentration. However, their very size makes patients and physicians afraid to attack them surgically, and as illustrated in the following case, good results can at times be obtained by treating them by the injection of strong sclerosing solutions.

*Case 4:* Thirty-one years of age. Three large phlebectatic masses were present on the posterior aspect of the left leg, two below the knee and one above. They had first been noticed by the patient when 14 years of age and have been growing larger ever since. The masses were painful in themselves in the standing position and the whole limb ached if the patient did much work. The first injections readily shrank the smaller lower mass, but injections into the large upper ones were of no avail. Close examination revealed that a greatly dilated venous trunk fed the uppermost mass from above, and that a similar large vein communicated the upper and middle mass and a smaller vein the middle and lower. Treatments were then directed to these feeder veins, the injections being made between tourniquets after partial aspiration of the contained blood. I say "partial" aspiration because there seemed to be no end to the amount of blood that could be obtained from these trunks, the impression being gained that these were direct branches of the deep venous system. Several injections with large doses (2 c.c.) of quinine and urethane have finally turned these veins into hard thrombosed cords and the phlebectatic masses are rapidly shrinking. It is possible that this case could have been more quickly cured by first tying off the feeding veins, but this would have been a formidable task as they were remarkably large and under unusual pressure.

*Varicosities and the Chronically Edematous Leg:* In many cases the legs are so swollen that the veins are not visible or palpable. If such patients are asked to wear an elastic stocking or bandage for a few days, the swelling is often reduced and the veins can be located. However, in the occasional case, there is a chronic edema and induration which is not reduced by this method. Careful palpation of such limbs will reveal soft resilient, semi-fluctuating areas, which are the varicosities, or venous sinuses, deeply situated because of the abnormal cutaneous edema. Note that this palpatory sign is the reverse of that usually obtained over varicosed veins; usually

the distended varicosities are firm and projecting from the adjacent soft parts. In the cases under discussion, the long standing edema has caused a massive induration which feels hard, in contrast to the blood filled varicosities. The needle frequently has to be thrust several centimeters deep to reach these sinuses and especial care must be made by repeated withdrawals of the piston of the syringe not to inject perivenously, for the veins being deeply situated and already in poorly nourished tissue, a false injection will result in a large slough. My one slough in over 700 injections was in a case of this sort. After all of the varicose sinuses are obliterated, the persistent edema is treated by a program of massage, baking and elevation, with marked benefit in the majority of cases.

*Varicose Veins in the Obese:* The obese patient is apt to have varicosities that are relatively small, deep and hard to locate. Such patients are likewise frequently victims of flat feet and arthritis of the ankle or knee. For these reasons the differential diagnosis of vague pains in this group at times becomes most difficult.

*Case 5:* First seen complaining of acute shooting pain from hip to ankle, somewhat along the postero-lateral aspect of leg. Pain relieved partially when in the recumbent position. No definite tender spots along course of sciatic nerve. History of swelling of feet and ankles during the past few months, since taking a position requiring continual work while standing. Treated with salicylates and applications of heat for atypical sciatica, for several months, with temporary relief. Swelling of legs became more definite and elastic stockings ordered. Definite varicosed condition of long saphenous of both legs discovered several weeks later, after the patient was required to stand quietly for fifteen minutes. With obliteration of the varicosed veins, swelling of legs ceased and limbs became pain free. Subsequently the patient has been caused to lose weight by dieting and endocrine therapy.

Note that the presence of varicose veins and their causal relationship was only discovered in this case after the use of elastic stockings and after prolonged standing. The relationship of varicose veins to painful joints is a similarly difficult problem. Very often the patient has several stiff and crepitating joints, but it is the joint that presents a few varices which is the most painful. Obliteration of these veins, particularly in the case of the knee, almost always diminishes the pain. Veins about the foot and ankle are usually best left alone. but, if because of arthritic pains about the ankle joint, it is decided to inject these varicosities, an especially fine needle should be used as the skin in this area is very tender, and a cut-away shoe should be worn for a while. Another characteristic of the obese group is the presence of fatty pads over the front or side of the ankle. I know of no satisfactory method of removing same. Flat feet could well be discussed here too, but I have nothing to say other than that they should be looked for and treated when present in every case of varicosed veins.

*Hair veins, spider web dilatations, superficial thrombi, partially obliterated varices:* Often after the large varicosities are removed, the patient will complain for cosmetic reasons of the tiny hair veins. These can usually be removed by simple needling and the application of a pressure pad. Occasionally it may be necessary to inject a few minims of a mildly irritating solution, such as 50 per cent dextrose, in which case slight unavoidable perivenous infiltration does no harm and obliterates the vein. The spider-web dilations respond unsatisfactorily to the injection method, there being as a rule not central, or key vein to inject. They are best left alone. When a small, exceptionally superficial vein becomes thrombosed and remains as an ugly raised, clotted vein, I have obliterated the segment to either side of it, waited several months for the process to get quiet and then nicked the skin with a sterile needle and let out the clot. If the thrombus is not readily removable, an organic digestant, such as enzymol or caroid, is applied on the dressing until it is dissolved. Occasionally an injected vein will seem to be only partially obliterated in that it forms an unresolving boggy lump. All that is necessary in this event is to insert a large gage needle into the center of the old blood clot and aspirate. A marked hastening of the sclerosing process will result.

*Varices of the vulva and lower abdomen:* Varices of the vulva are commonly due to the same causes that produce varicosities of the long saphenous. Thus pregnancy is a com-

mon cause. Theoretically it should be perfectly safe to inject such veins so long as there is no history of deep femoral thrombosis and many workers regularly do so. I personally have had no such cases, but in light of present knowledge believe their treatment would be safe. On the other hand, varices of the abdominal wall are usually compensatory to iliac thrombosis or hepatic disease and had best be left alone.

*Varices following injury or operative trauma:* A blow to the leg or an incisional injury, as in operations for osteomyelitis, may be followed by varicose veins. It is my impression that such venous dilatations are due to injury or infection of the vein wall or the supporting tissues, rather than to compensatory dilatation due to deep venous system obstruction. The frequent recurrence of varicose veins after operative removal is probably explained on a similar basis of injury to unseen adjacent and often parallel veins. When varicosities have been present for a long time over a bony surface, the nutritional disturbance and infection produce a periositis which may be difficult to differentiate from osteomyelitis; or if osteomyelitis has been present, may make the proper interpretation of the bony thickening most confusing.

*Case 6:* An injury to the left leg during the World War resulted in an extensive osteomyelitis of the left leg. Following three operations, the process became quiescent until 1927 when there was acute localized redness, edema and pain over the tibia, which was interpreted as acute periostitis and which subsided without operative intervention. Many varicose veins which lined the old scar became much larger after this attack. In 1930 the leg was more or less continuously painful and an X-ray taken in June at the Public Health Hospital showed marked periosteal thickening but no evidence of active osteomyelitis. It was thought that the periosteal thickening and the pain in the leg were due to the varicosities and the same were readily obliterated. However, the pain persisted and a second X-ray showed an area of softening in the lower end of the tibia. Three days later the soft parts over this area broken down, revealing a discharging bone sinus.

*Varicose Veins and Vascular Disease of the Extremities:* It must be remembered in the differential diagnosis of varicose vein cases, especially those presenting themselves for leg pain, that the symptoms may be due to other causes than varicose veins. Thrombo-angiitis obliterans, arteriosclerosis, Raynaud's disease must be ruled out. In the examination for these affections one notes intermittent claudication, color changes in the elevated or dependent position, or following exposure to the cold, pulsation in the dorsalis pedis or posterior tibial arteries. Special tests of value are the angle of circulatory efficiency of Buerger, the histamine reaction of Star, and colorimeter determinations of surface temperatures in the extremity. Star is pursuing his work on a large series of cases at the University of Pennsylvania Hospital and has demonstrated conclusively that the reaction to the skin following stab punctures through histamine can be taken as direct evidence of the vascular condition of the part. If there is any question with regard to the arterial circulation, the varicose veins should not be injected, lest a coincident or subsequent gangrene be attributed to the vein therapy. De Takats describes the following case: "W. S., a man, age 60, had had intermittent claudication for more than a year. After a slight trauma of the right shin, an ulcer had developed, gangrenous in character and progressive. He had a few dilated veins at the inner surface of the calf. Several physicians had seen him and diagnosed the condition as varicose ulcer. When seen, the patient had no pulse in the popliteal, posterior tibial or dorsalis pedis arteries. At amputation above the knee, an occluding thrombus was found in the popliteal artery. Old vessels showed thick atheromatous changes."

Erythema nodosum and erythema indurata are classed as skin rather than circulatory diseases, the former being probably rheumatic in nature and the latter a tuberculid. I have had two patients present themselves for vein treatment because of pain in the leg when the real cause was the unnoticed deep-seated painful nodules of erythema nodosum. A case of erythema indurata has been treated for years as a pre-ulcerous condition related to small varicose veins.

*The Varicose Ulcer:* The association of leg ulcer and varicose veins is familar to us all. The ulcer has usually developed following a

slight injury to tissue poorly nourished by stagnant venous blood. In the differential diagnosis, vascular disease, syphilis, tuberculosis or malignancy must be considered, but it must be remembered that syphilis or tuberculosis may be present in a patient having a true varicose ulcer.

*Case 7:* An ulcer over anterior surface of tibia for one year, the condition being attributed to luetic infection as evidenced by a positive Wassermann. Failure of response was said to be due to failure of the patient to take "shots" regularly. When examined, a definite "feeder" varicosity was noted as shown in one of the lantern slides. Three weeks after injection of this vein the ulcer was healed.

When such key veins are present, one can invariably predict that the ulcer will rapidly heal upon their obliteration by injection. In contrast to this type is the leg ulcer of long standing in a chronically edematous and indurated leg. The ulcer is large and unhealthy, the surrounding skin is thickened and scaly. No veins are visible or readily palpable. The elastic stocking helps but little in reducing the swelling, the edema here is due to lymphatic block, the previous infection having obstructed the accompanying lymphatics. In the examination of this type, I wish to call attention again to a point previously mentioned. Careful palpation of the tissues adjacent to the ulcer will usually elicit definite semi-fluctuating softened areas, like soft channels running through the indurated skin. The conditions are opposite to those usually found. No true vein exists, the intima having been destroyed by infection, and the softened areas are deep blood sinuses, which require that the needle be inserted fairly deep to reach them. However, their obliteration helps considerably in healing the ulcer.

As to the local treatment of the ulcer cruris, for the smaller ulcers with definite feeder veins, very little is necessary. Silver nitrate or balsam of Peru may be used to stimulate granulations, adhesive strips may be used to support and guide the new epithelium. For the larger ulcers, the pressure sponge method of McPheeters is probably the best. The ulcer base is stimulated with Dakin's solution, a silver nitrate paste or balsam of Peru (the Tulle Gras of E. Fougeras is excellent here), fluff gauze is applied and over this is placed a soft rubber sponge. The dressing is supported by an elastic stocking or bandage until the ulcer is healed, when it may be protected for several more weeks by an Unna's paste boot.

In some few cases, even after all of the blood sinuses are obliterated, the ulcer will fail to heal. In such cases it is advisable to excise the ulcer and apply a whole thickness or Davis pinch graft. If edema persists, it is to be remembered that it is lymphatic rather than circulatory and that by persistent use of proper methods, new lymphatics can be made to form. These methods consist of continued use of elastic stocking or paste boot support, of daily gentle massages of the limb, of daily use of the baking apparatus, and the elevation of the leg in bed at night and as often as possible during the day. It is remarkable what benefit can be obtained in these chronically edematous legs by such procedures. In cases of very long duration, a Kondoleon fascial stripping operation may be done, and the ulcer excised and grafted as described by Trout. Dr. Trout, in a recent personal communication, informs me that he has given up his tube grafting for the simpler Davis graft.

Before closing, I wish to say a few words about ulcer cruris and past history of milk leg. The injection method is not contraindicated *per se* because of the previous milk leg. Treatment will depend on whether the deep veins are functioning or not. If a tight elastic stocking has been worn with comfort, and Trendelenburg's and Perthes' tests are positive, we are perfectly safe in injecting these veins.

*Medical Arts Building.*

DISCUSSION

DR. R. DUVAL JONES, JR., Norfolk. Since it is so very late, I shall not attempt to discuss at length Dr. Lowenberg's splendid and comprehensive paper. There are, however, a few salient points which I consider worthy of emphasis: First, the matter of determining the patency of the deep veins; second, phlebitis as a contradiction, and, third, the prevention of the escape of sclerosing fluids into the tissues.

When the superficial veins are dilated in order to compensate for obliteration of the deep veins, the injection treatment is obviously contra-indicated. Dr. Lowenberg has mentioned the various ways of determining the patency of the deep veins, and of these I have found the simple test of having the patient wear an elastic stocking or snug bandage for a day or so quite satisfactory. If the patient reports relief, the surgeon is justified in assuming that the deep veins are adequate to take care of the circulation. On the other hand, when the bandage or stocking causes distress, the probabilities are that the deep veins are obliterated.

It is interesting to note that, of all the cases re-

ported in the literature, only seven have died from embolism, and of these, four were known to have recently suffered with phlebitis. Thus it would seem that the injection treatment of varicose veins is contra-indicated whenever there has been any recent evidence of phlebitis.

As regards the escape of sclerosing fluid into the tissues, one cannot be too careful. Unfortunately there is no fluid which will cause sclerosis of the vessels which will not at the same time cause a slough when a sufficient quantity escapes into the surrounding tissues. We are told that the first sign of escaping fluid is a stinging, burning pain in the region of the injection. However, this type of pain does not necessarily mean that there has been an escape of fluid. In many instances where the walls of the veins are thin the patient will complain of the same pain. For this reason it is wise to withdraw a few drops of blood before continuing the injection. When one attempt has been made to inject a vein and the needle has slipped out or you have failed for other reasons, it is unwise to attempt another injection in the vicinity of the first puncture. This is particularly true when a thin fluid, such as quinine and urethane, is being used, because of the fact that the fluid may escape through the original puncture in sufficient quantity to cause a slough.

DR. H. C. JONES, Petersburg: I have injected a few of these veins, and right now I have a very definite problem of slough. I have seen a number of these veins injected at the Mayo Clinic by Dr. Dixon and I followed the technic that he used All three of these sloughs occurred about three weeks after the injection. Quinine urethane was used. No pain was caused at the time of the injection; in fact, the patient noticed no discomfort for about three weeks afterward. All came out of the same box of ampoules. I noticed on palpating these veins that no definite clot was formed. All began to ulcerate at about the same time. As I opened them I could press out an unorganized clot. I was impressed that Dr. Dixon, at the Mayo clinic, used no tourniquet. (DR. R. DUVAL JONES: He does not use a tourniquet). I believe these sloughs developed from the fact that the blood was not drained out. Dr. Lowenberg spoke just now of not being able to draw all the blood out of large veins. I believe between two tourniquets it might be done.

I would like to know how to heal these ulcers; that is the problem that is confronting me now. It has been going on for about five weeks and is the most embarrassing thing I have ever had in my life. The patients, of course, are ambulatory, but their condition is very embarrassing.

DR. LOWENBERG, closing the discussion: I have had one slough, too, though this was the only one in a large number of cases. The patient was not intelligent; I injected her veins, put on a pressure pad and told her to take it off the next morning. She came in about ten days later and still had it on, and the skin was irritated from it. I injected another deeply situated vein with quinine and urethane and one month later learned that she had been laid up with a slough. This particular patient had a luetic infection. It is my routine to take a Wasserman, etc., but in this case it was by error omitted.

When I get a soft partly thrombosed vein, as Dr. Jones described, I stick a needle into it and aspirate it. That is in the paper, but I skipped it. I draw out the unclotted blood. Now, as to healing it, there does not seem to be much to do. When we get a slough, the whole question of healing it is to get rid of the necrotic material. I use a preparation called enzymol, which is applied until a healthy base appears, then I use balsam of Peru in castor oil daily until it heals up. It may take a good long time, unless you can get your patient off his feet.

## THE DIAGNOSIS OF PERICARDIAL EFFUSIONS.*

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Pericardial effusions are very frequently misdiagnosed or diagnosed late when they should be diagnosed fairly early. Perhaps the main reason for this is that the condition is not particularly common and is not always thought of. Nevertheless, if one examines the patient carefully enough and often enough during the course of the illness, an ordinary pericardial effusion should not be missed. The object of this paper is to bring out certain features in the diagnosis.

At the outset we must distinguish, of course, exudates from transudates. In the case of the exudate there is usually evidence of infection, with fever, leucocytosis and a general toxic condition. With the infection there is often a train of symptoms which directs attention to the heart; either pain, of any degree of severity, or merely a dull, heavy feeling of discomfort in the region of the heart; dyspnea is usually present, the pulse rate is high and irregularity is common. The usual description of the physical signs as given in the text-books is about as follows: At the onset there may be a pericardial friction rub noted, but as time goes on the accumulation of the fluid usually separates the layers of the pericardium and prevents the friction. If pain has been present it usually disappears when this occurs and gives place to a dull sense of oppression or suffocation. The friction rub at times persists at the base, especially when the patient sits erect. The apex impulse becomes weaker and eventually may be impalpable. At the same time the heart sounds become progressively fainter and muffled in character. When the effusion becomes large, and especially when it develops rather rapidly, there are almost always alterations of the normal signs in the portion of lung posterior to the heart. The breath sounds assume a bronchial quality and the spoken and whispered voice sounds become

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greatly intensified. With these changes there is frequently diminished resonance in the same area. These symptoms and signs, together with others of minor importance and the fluoroscopic or roentgenographic findings, should give little cause for inability to diagnose.

In certain instances, however, and these are not rare, the signs are atypical if the above description is considered to be that of the usual physical syndrome. Also, in an occasional case a fibrinous pericarditis may be associated with an adjacent pneumonitis, giving a picture which superficially may be readily confused with pericarditis with effusion.

Apparently contrary to common belief, most of the fluid in a pericardial effusion is lateral and posterior to the heart. The latter may be thrust forward against the chest wall and to a certain extent be flattened out there. In this way the heart sounds become much intensified rather than much diminished, and the cardiac impulse more diffuse and very prominent. At the same time a pericardial friction rub is usually audible in the second and third interspaces to the left of the sternum or even over most of the precordium. The area of cardiac dulness anteriorly may be moderately increased, but the examiner may attribute this to dilatation and consider the case one of fibrinous pericarditis. Posteriorly, however, he finds an area suggestive of pneumonitis, usually below the angle of the scapula, covering a variable extent and possibly even extending into the axillary region. This is not due to compression atelectasis as is commonly taught but to the fact that the main bronchus of the lower lobe of the left lung is pressed against the vertebral column by the distended pericardial sac, and the breath sounds therefore are transmitted to the chest wall directly from the bronchus (Conner). The dulness is due to the thinness of the pulmonary tissue between the chest wall and the distended pericardium and to a less extent to compression atelectasis. If the examiner fluoroscopes the chest he will probably find what appears to be in the anteroposterior view merely a dilated heart; in the oblique view he may or may not be able to see the bulging of the pericardial sac posteriorly. His X-ray films will show no evidence of pneumonitis and he may conclude that the shadow cast by the supposedly merely dilated heart is obscuring a patch of pneumonitis posterior to the heart. From a practical point of view it might make little difference whether he diagnosed the situation correctly or not, but from the standpoint of scientific medicine it makes a great deal of difference. In the first place, such a combination of signs should always lead to the question as to whether there is fluid in the pericardial sac with altered pulmonary signs posteriorly, or a fibrinous pericarditis with an adjacent pneumonitis. We feel that the chances are always in favor of the former condition. In the second place, dyspnea and cardiac embarrassment may become rather extreme, and if the condition is properly diagnosed and the judicious aspiration of the fluid performed, the situation may be greatly relieved.

When one suspects that there is a pericardial effusion he will probably be able to determine the existence of this condition by frequent percussion of the cardiac area and the study of serial roentgenograms. Usually the fluid will continue to accumulate and the cardiac area will assume the usual shape produced by a pericardial effusion, even though the signs as described anteriorly persist. In the case of a localized pneumonitis associated with a fibrinous pericarditis the cardiac outline will not change appreciably unless fluid does later accumulate, and roentgenographic evidence of an extending pneumonitis may develop. In this condition the course of the disease is greatly prolonged and the pneumonitis is very gradually resolved. As a rule, the fibrinous pericarditis which is associated with the pneumonitis is of the idiopathic type, that is, it is difficult to account for the origin of the pericarditis. In the case of a pericardial effusion with posterior pulmonary signs usually there is evidence of a rheumatic infection and preexisting endocarditis, or some other fairly easily determined infecting agent, such as the pneumococcus or tubercle bacillus.

The problems involved in the diagnosis of cases of these types are indicated in the following case reports:

*Case 1.*—The patient, a colored girl aged 13 years, was admitted to Georgetown University Hospital on September 10, 1929. Since the age of four she had had four attacks of rheumatic fever. Following the first attack she had attacks of dyspnea with edema of the lower extremities, especially when she would be more active.

Two weeks before admission she began to

have pain and swelling in both knees and the right shoulder. She did not improve and when brought to the hospital was complaining of pain beneath the sternum.

Physical examination on the day of admission showed severe chronic tonsillitis, a pericardial friction rub over the entire precordium, dulness with tubular breathing and bronchophony over the left lung posterior to the heart. There was no evidence of pleural effusion. The heart and respiratory rates were very rapid. There was a localized mid-diastolic murmur near the apex with a systolic murmur at the apex. The first sound was snappy and no thrills were noted. The apex impulse was diffuse but was felt and heard with more than normal intensity. The area of cardiac dulness was very large, the heart practically filling the entire left chest, but the cardiohepatic angle was acute.

The urine showed a few red blood cells, but was otherwise normal. The hemoglobin was 60 per cent by the Dare method. The erythrocytes numbered 3,400,000 per cu. mm., and the leucocytes numbered 14,350 per cu. mm. of blood, of which 93 per cent were neutrophiles. The temperature was 102.4° F. and the pulse was 120 beats per minute. The blood Wassermann and Kahn tests were negative. The fluoroscopy and the roentgenogram revealed no certain evidence of pericardial effusion (Figure 1a).

The diagnosis was made of recurrent rheumatic fever and mitral endocarditis; mitral stenosis and regurgitation; acute and possibly chronic pericarditis. There were two possibilities to account for the lung signs: 1. Pneumonitis due to extension from the pericardium. 2. Pulmonary signs due to fluid in the pericardial sac.

In accordance with our belief that chronically infected tonsils should be removed as early as possible in rheumatic infections, tonsillectomy was performed promptly.

On September 17th, it was noted that the area of cardiac dulness was increasing upward and to the left. The area of signs of lung compression was increasing downward and there was also noted retraction on inspiration of the intercostal spaces laterally and posteriorly, on the left side. The apex beat was still diffuse, palpable and audible with undiminished intensity; the area of pericardial friction rub, however, had diminished somewhat in extent (Figure 1b).

On September 19th, the dyspnea had become so marked and the pulse rate so rapid with the greater accumulation of fluid that it was thought advisable to aspirate. This was done through the seventh interspace in the posterior axillary line and 400 c.c. of straw-colored fluid tinged with blood was withdrawn. Physical examination immediately afterward revealed almost complete disappearance of the pulmonary signs. About a week later signs of increasing fluid were noted, with an increase in the pulmonary signs posterior to the heart; the pericardial friction rub had dis-

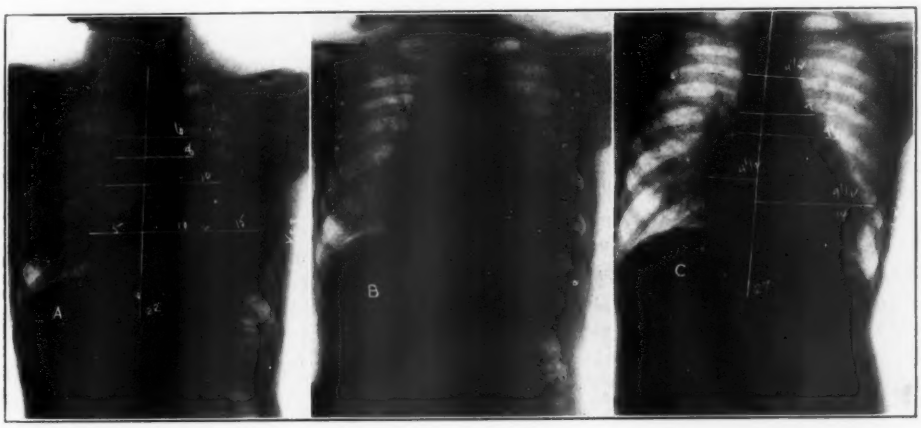


Fig. 1a.—Case 1. Roentgenogram of chest upon admission. No certain evidence of pericardial effusion.
b.—Case 1. Roentgenogram of chest seven days after that of Figure 1a, showing undoubted evidence of pericardial effusion.
c.—Case 1. Roentgenogram of chest three weeks after that of Figure 1b. Fluid entirely absorbed. Comparison with Figure 1a suggests that fluid must have been present then.

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appeared. Aspiration was attempted exactly as before, but owing to the rapid coagulation of the fluid only 50 c.c. was removed, and it was thought that absorption of the fluid would take place rapidly from this time.

The patient improved slowly but steadily after this. The temperature was remittent in character, the highest for the first few days being 102.4° F. It gradually subsided so that at the beginning of the third week it was normal. The pulse rate varied from 100 to 120 during the febrile period of the disease and for some time afterward.

Except for a slight exacerbation of her joint pains on October 27, her convalescence was uneventful and she was discharged on December 1, 1929, about eleven weeks after admission, with no evidence of pericarditis and no abnormal lung signs (Figure 1c).

She was seen at her home on February 25, 1930, and was found to be in very good health, having gained weight and strength. Her temperature was 98.4° F. and her pulse rate was 90.

*Comment.* In this case there was little doubt as to the presence of pericardial effusion when the cardiac outline was daily noted to be extending. The interesting feature was that in spite of this apparently large effusion the heart sounds anteriorly became more intense, the apex impulse more prominent and the pericardial friction rub more persistent. Signs of embarrassment of cardiac action progressively increased so that it was considered imperative to aspirate for the relief of pressure. Ordinarily, with pericardial effusion of rheumatic origin it is unnecessary to aspirate. We were impressed by the interesting observation that there was a suggestion of the coronary form of T-wave in the electrocardiogram. Our attention was called to the work of Scott, Feil and Katz, who showed that the coronary form of T-wave could be produced by compression of the heart by a pericardial fluid accumulation. Unfortunately this electrocardiogram was taken a few days after the aspiration of fluid, and the importance of our electrocardiographic finding is diminished by our inability to observe the form of the T-wave throughout the changing conditions of the intrapericardial pressure.

*Case 2.* The patient, a colored boy aged 16 years, was admitted to Georgetown University Hospital on December 9, 1929. On November 29, 1929, with no premonitory symptoms, his ankles became slightly painful and then became somewhat swollen; a few days later he developed pain over the precordium and severe dyspnea, which gradually became worse. He had had a typical attack of rheumatic fever the year previous, which had confined him to bed for seven months. For two years before he had had vague pains in his limbs, which, he was told, were growing pains. The remainder of the history was irrelevant.

On admission he was orthopneic but not complaining of much pain. There was no edema anywhere. The apex beat was in the 5th interspace just outside the nipple line. The area of cardiac dulness was greatly increased to the right, left and downward. Systolic and diastolic murmurs were heard over the entire precordium and a to-and-fro pericardial friction rub over the upper half of the precordium. At the apex a gallop rhythm was noted with systolic and diastolic thrills. Posteriorly, there was dulness on the left side extending from the base to just above the angle of the scapula, with bronchial breathing and bronchophony. The liver was not palpable. Fluoroscopy showed a moderately enlarged heart with normal pulsations. The temperature was 100.8° F. and the pulse 102. The urine was normal. The hemoglobin was 63 per cent by the Dare method. The erythrocytes numbered 3,400,000 per cu. mm., and the leukocytes numbered 18,400 per cu. mm. of blood, of which 88 per cent were polymorphonuclear neutrophiles. The blood Wassermann and Kahn tests were negative.

After a week with no changes in the physical signs, it was determined to aspirate the pericardial sac because of a probable fluid accumulation. Paracentesis was done posteriorly through the 6th and 7th interspaces, but no fluid was encountered (Figure 2a).

The patient was examined day by day and it was noted twenty days after admission that the area of cardiac dulness was slightly less. From this time on the cardiac measurments gradually decreased and the area of dulness in the lung posteriorly gradually cleared up. This change was verified by roentgenograms (Figure 2b). The pericardial friction rub disappeared and his symptoms improved greatly. During all this time he had a low grade fever, the temperature reaching 100° F.

He was discharged on January 31, 1930, with moderate cardiac enlargement; the lungs were absolutely clear. He was still running a low grade fever and his pulse rate was 110.

He was seen again on March 10, 1930. He was able to get about fairly well and was very much stronger. The physical findings were the same as on dismissal. His temperature was normal and his pulse rate was 100. There was no friction sound, but the murmurs were still present.

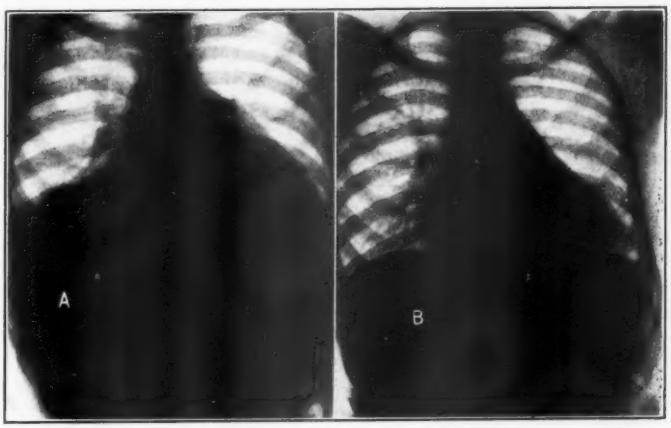


Fig. 2a.—Case 2. Roentgenogram of chest. Questionable effusion.
b.—Case 2. Roentgenogram of chest five weeks after that of Figure 2a, showing diminution in size of cardiac area.

*Comment.* In this case, while we were unable to obtain fluid on aspiration, we feel certain that there was considerable fluid posterior to the heart in the pericardial sac. The signs indicating this were practically identical to those present in the first case, and as the patient gradually improved these signs gradually subsided and eventually disappeared. The cardiac and respiratory embarrassment were not as severe as in Case 1; and the roentgenographic evidence of pericardial effusion was not striking. The diminution in the size of the heart shadow with the disappearance of the signs of pulmonary compression are sufficient evidence, however, to warrant the diagnosis. We do not believe that the change in the cardiac shadow was due to a regression of a dilatation, because the decrease in the area was more basal than one should expect with a dilated heart, and because it is unlikely that any heart could dilate to such an extent as to produce the pulmonary signs present. In this regard we can say that we have never seen these pulmonary signs in a case of frank dilatation of the heart, nor in any case of hypertrophy of the heart, no matter how great the hypertrophy.

*Case 3.* The patient, an unmarried woman, aged 29 years, was admitted to the hospital complaining of precordial pain. She had suddenly developed a headache with stiffness and soreness of the neck muscles after sitting in a "refrigerated" moving picture theatre, and the next morning complained of severe pain over the heart. Her past history was completely negative. Physical examination was negative except for a to-and-fro pericardial friction rub over the entire precordium, most marked at the apex. The temperature was 101° F., the pulse rate 106. The heart sounds were normal and the cardiac dulness not increased. The hemoglobin was 60 per cent by the Dare method, the erythrocytes numbered 3,140,000 per cu. mm., and the blood smear showed moderate achromia with mild poikilocytosis and anisocytosis; the leucocytes numbered 5,800 per cu. mm. with 56 per cent polymorphonuclear neutrophiles. Urinalysis showed a trace of albumin and a few white blood cells. Repeated blood cultures throughout the course of the illness were sterile. For eleven weeks the temperature ranged from 98° to 104° F., often of an irregularly septic type and with peculiar exacerbations and partial remissions. The pulse ranged from 100 to 130 beats per minute. The blood pressure remained around 115 mg. Hg. systolic and 70 diastolic. A moderate

anemia was present and the leucocytes ranged for several weeks between 5,000 and 6,000 with a normal differential count. The spleen was never palpable nor were petechiae ever seen. Endocardial murmurs were never heard. At first there were a few rales audible at the left lung base. Later a pleural friction rub was heard here. In the fourth week evidence of pulmonary consolidation became apparent in the left lower axillary and subcapsular regions. The cardiac dulness was merged with this area, so that the question arose at once whether there was not a pericardial effusion with posterior pulmonary signs. Roentgenograms showed no enlargement of the cardiac shadow but some opacity apparently behind the heart, as indicated in an oblique view (Figure 3).

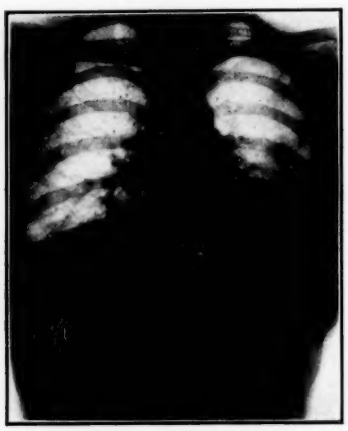

Fig. 3.—Case 3. Roentgenogram of chest, showing opacity lateral to apex of heart and apparently caused by a pneumonitis posterior and lateral to the heart.

This was interpreted as an area of pneumonitis extending from the pericardial inflammation. Very gradually resolution occurred and very gradually the pericardial friction rub vanished. Multiple small transfusions and diathermy in the area of pneumonitis were the forms of treatment used in conjunction with a general supportive regimen. Convalescence was very slow but the patient made a complete recovery.

*Comment.* In this case, while the physical signs except for the absence of evidence of valvular disease to a certain extent simulated those of the preceding two cases, there was never any evidence that the heart was being pushed anteriorly by pressure from behind nor any change in the cardiac outline. In addition there was evidence that the pneumonitis extended laterally more than could possibly be accounted for on the basis of pressure, and the roentgenograms finally showed extension of this pneumonitis beyond the cardiac area. The infecting agent in this case remained indeterminate throughout.

*Case 4.* The patient, a colored woman aged 60 years, was admitted to Georgetown University Hospital on March 29, 1930. In childhood she had diphtheria and scarlet fever. Since then she had always been well until a few weeks before admission when she began to have a little effort dyspnea and some edema of the lower extremities. She had pain and "fluttering" about the heart and was more comfortable when propped up in bed.

The heart was definitely enlarged, the apex beat being diffuse and in the 6th interspace outside of the nipple line. The aortic arch was widened. A systolic crescendo murmur was heard at the apex, extending into diastole; the second aortic sound was very loud. The lungs were clear. The liver and spleen could not be felt. The blood pressure, blood Wassermann and Kahn tests, and the hemogram were essentially normal. The urine showed a moderate amount of albumin and casts and the non-protein nitrogen was 112 mg. per 100 c.c. of blood. The ocular fundi were negative. The roentgenogram of the chest showed what appeared to be merely a hypertrophy and dilatation of the heart (Figure 4). A few days after admission the patient suddenly died. Post-mortem examina-

Fig. 4.—Case 4. Roentgenogram of chest. Hypertrophy or effusion? Round opacity at right hilus is calcified lymph nodes.

tion revealed 500 c.c. of straw-colored fluid in the pericardial sac, which measured 19.5 cm. in the transverse diameter. The lungs showed moderate congestion. There was some fluid in both pleural cavities and in the peritoneal cavity. The liver and spleen showed chronic passive congestion. The heart muscle was flabby but there was no hypertrophy, endocarditis or significant coronary sclerosis. The kidneys were granular but only slightly contracted. Microscopic examination revealed only passive congestion of the viscera. The kidneys did not show evidence of chronic nephritis. Fibrosis of the myocardium did not exist.

*Comment.* This case is included in our report to show that the physical signs may be quite atypical. In this instance, of course, there was no evidence of pericarditis and pulmonary signs were absent. The condition was one of hydropericardium and there is every reason to believe that in this instance the transudate formed very slowly. The exact clinical diagnosis of the case was indeterminable, although we were inclined to consider the case one of hypertensive heart disease in spite of the fact that there was no hypertension at the time of examination nor a history of it previously, and in spite of the absence of changes in the retinal arteries due to hypertension. In making this tentative diagnosis we blinded ourselves to the dictum of Yater and Wagener, who showed that there is always evidence of a pre-existing hypertension in the retinal arteries in cases of hypertensive heart disease. Renal insufficiency due to chronic glomerular nephritis was considered. Even in the light of the post-mortem findings, however, we do not know exactly how to classify the case. The roentgenologists who had previously diagnosed the cardiac shadow as being that of a hypertrophied heart, after reconsidering the films following necropsy, maintained that they would make a similar diagnosis in the future from a similar shadow. This case illustrates the fact that the pericardial effusion must occur rather rapidly and be in a very large amount to produce the posterior pulmonary signs. It also illustrates the fact that considerable fluid may be present in the pericardial sac when the fluid accumulates slowly without causing the apex impulse or the intensity of the heart sounds to be greatly diminished. The reason for this probably lies in the fact that when the effusion accumulates slowly the tension in the pericardial sac is not greatly increased. The pericardium in this type of case is seen to be lax rather than taut.

## Concluding Comment

We were interested in calling attention to these supposedly atypical clinical types of pericardial fluid accumulation because the cases presented here were observed within such a short period of time and because the literature and the text-books have very little to say about such cases. While it was impossible to check all of the articles written on pericarditis with effusion the perusal of a great many of them failed to reveal much discussion concerning similar cases. Usually such cases are considered rare instances of localized effusion, in which the fluid is confined to the posterior part of the pericardial sac by fibrinous adhesions elsewhere and the heart pushed forward against the chest wall. We feel, however, that the group of signs illustrated in this paper is usual rather than unusual. From the anatomical standpoint pericardial fluid should accumulate posterolaterally to the heart and compress the heart against the chest wall anteriorly, thus accentuating the heartbeat and the friction rub. We are inclined to believe that for this reason, perhaps, many cases of pericardial fluid accumulation are not diagnosed. Attention is drawn to the fact that the alterations in the physical signs in the lung posterior to the heart are due partly to the crowding of the left lower bronchus against the left side of the spine (tubular breath sounds and bronchophony) and partly to the relative thinness and the compression of lung tissue posterior to the distended pericardial sac (dulness). In conclusion, the dictum may be offered that the association of a pericardial friction rub with signs suggestive of pulmonary consolidation posterior to the heart usually means pericardial effusion.

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I love the man who says, "I can,"
Though tough and hard the grade;
Who goes right in and works to win,
Until the goal is made!

—*Selected.*

## LATERAL SINUS THROMBOSIS COMPLICATING MASTOIDITIS.*

By MORTIMER H. WILLIAMS, M. D., Roanoke, Va.

Thrombosis of the lateral sinus is always to be remembered as one of the possible complications of acute or chronic suppuration within the ear. The serious complications of mastoiditis are meningitis, sinus thrombosis, and brain abscess, named in the order of their frequency. Statistics show there is one case of sinus thrombosis to every one hundred cases of mastoiditis.

Thrombosis of a sinus must always be regarded as a grave condition and one which will terminate fatally unless relieved at the hands of the surgeon. Dench reports a mortality of 28 per cent, but states that many of those cases died from complicating diseases such as meningitis and brain abscess. Dr. Richard Travis Atkins, of New York, reports a mortality of 27½ per cent out of his series of forty cases.

However, it is generally agreed that the results of operative treatment in these cases are exceedingly good, especially if the diagnosis is made early, and proportionately bad when made late.

The recognition of this condition as a rule is not difficult, especially where we have the classical picture; suppurating ear, mastoid involvement, chills and extensive fluctuations in temperature. But at times the mastoid signs are masked, there are no chills and it is impossible to get an intelligent history. Then it is well to bear in mind that not only may a suppurative process within the mastoid be complicated by this lesion, but a middle ear suppuration, with very little, or no involvement of the mastoid structures at all, may cause this condition as well.

The case I am about to report falls in this class, and is interesting from several standpoints.

### Report of Case

M. S., a boy, aged 12 years, was admitted to the hospital on the night of January 5, 1931, around ten or eleven o'clock. Had been brought in by his family physician who had found him the day before with high temperature, and the history of having had a discharging ear.

*P. I.:* Ten days prior to admission developed a cold and complained of pain in left ear. After two days, rupture occurred with drainage of thin yellowish pus, which became very scant two or three days prior to coming to hospital. There had been no chills.

*P. H.:* Sore throat five weeks ago, ear ached for one day at that time. Had the usual diseases of childhood. Had pneumonia four or five years ago.

*Physical Findings:* A thin, wiry mountain boy, appears ill. Temperature 102.4; pulse 100; respiration 22. Slight watery discharge from left ear. Region of mastoid of normal appearance, no redness nor swelling. Only slight tenderness over antrum, no sagging of posterior wall. Drum perforated at lower margin, small amount of thin discharge in canal. Heart, loud systolic mitral murmur. Urine negative. Blood showed 10,800 leucocytes.

From the findings I felt very sure that there was not much involvement of the mastoid. Ordered irrigations for the ear, and ice-cap placed over mastoid process. Next day at noon temperature was still 102. A wide incision of the drum was made, hoping that better drainage might help matters.

An X-ray of the mastoid had been made that morning, with the report of slight cloudiness in the region of antrum, but no breaking down of cells. At this time the patient had developed a bad cough, and pneumonia was suspected. An internist went over boy's chest and found considerable moisture at base of left lung. X-ray examination showed an essentially negative chest. That night the boy's temperature went to 105.

On the following morning I made another careful examination of ear and mastoid with the same findings: scant watery discharge and slight tenderness over antrum. But after palpating the mastoid tip where there was no tenderness, the fingers were drawn firmly down over the jugular, and the boy cried out with pain. This was repeated with the same result.

Immediate preparation was made for mastoid operation, assuming there was a jugular thrombosis.

On going through the cortex a normal appearing mastoid was uncovered; no breaking down of cells and no pus until the antrum was reached.

There was a small amount of pus and granulation tissue in the antrum, and on curetting this area a small sinus tract leading from the antrum across to the knee of the lateral sinus was found. This tract was no larger than the

*Read at the meeting of the Virginia Society of Otolaryngology and Ophthalmology, in Richmond, May 2, 1931.

lead of a pencil, but was definitely discolored and necrotic.

On uncovering the lateral sinus the wall was found to be yellowish in color and to have a thick leathery feel. The sinus was opened and found to be filled with a blood clot which was beginning to break down. Some of this material was scooped up with a curette and sent to the laboratory for examination; and the report came back, numerous short chains of streptococci.

Dr. Paul Davis was in the hospital and did the surgery on the neck. When he uncovered the jugular vein it appeared to be thrombosed. On tapping it in the region where the facial vein comes off there was no bleeding; a second tap was made an inch lower with the same result: a third tap was made an inch below this and there was slight bleeding.

A ligature was placed below the point of the last tap, which was about an inch above the clavicle, and the vein was resected. The wound was closed with silk and a rubber dam drain inserted. While this was being done the laboratory was typing blood of members of the family for transfusion.

I then uncovered the rest of the lateral sinus and found the clot extending well into the torcular, and, with a gouge and rongeur, the bone plate over the sinus was removed to within an inch of the posterior median line of the skull before healthy sinus wall was uncovered.

The sinus was opened and the clot removed to this point with no bleeding. A small ring curette was then passed still farther back into the sinus and the rest of clot removed, and there was a gush of blood. A compression pack was put in place.

The entire cavity was then packed with iodoform gauze and the wound brought together at the distal end with metal clips. Before the patient was taken off the operating table a transfusion of 200 c.c. of blood was given.

On the following morning the boy seemed much brighter, having rallied from the operation, and his temperature was normal.

That evening temperature began to rise and on the following morning patient appeared very septic, was drowsy and there was evidence of metastasis as any movement of right hip or left shoulder would cause excruciating pain.

The third day after operation the condition of patient was still bad; septic temperature ranging from 99 to 103, and extreme drowsiness. A blood count was done at this time and showed 25,800 whites with 93 per cent polys. A second transfusion of 200 c.c. of blood was given followed by a decided improvement. On the sixth day after operation a full dressing was done, ethylene anaesthesia being employed. On removing the gauze packing from torcular end of the sinus, profuse bleeding was encountered. Another compression pack was put in, and removed two days later with no bleeding.

The boy continued drowsy and to run a septic temperature until the ninth day after operation, when another transfusion of 200 c.c. of blood was given, and that night his temperature dropped to normal and remained there until he left the hospital two weeks later. A blood count done the day following the last transfusion showed 11,200 white cells with 79 per cent polys. Blood cultures taken at different intervals were repeatedly negative.

During the last week of the patient's convalescence in the hospital, when the sinus had granulated from the bottom, under ethylene anaesthesia, I dissected loose the scalp flaps and brought them together over the bed of the sinus and got a good union, with a decided improvement in appearance at the site of the wound.

The boy continued to suffer acutely from the arthritis in hip and shoulder, and left the hospital on crutches at the end of the fourth week. He remained in town for two or three weeks after leaving the hospital and was able to discard his crutches before returning home, at which time he had completely recovered.

### Comment

In reviewing this case, certain points are worth emphasizing:

1. The absence of chills with such extensive thrombosis of sinus and vein.
2. The absence of any appreciable mastoid involvement, i. e., not enough to show signs of mastoiditis either from external examination or with X-ray.
3. The importance of palpating the jugular vein in the routine mastoid examination.
4. The presence of moisture at the base of the lung, I believe, can always be found in cases of lateral sinus thrombosis.
5. The importance of repeated transfusions of small quantities of blood to combat the bacteremia in these cases.

In my opinion, if possible, the first trans-

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fusion should always be given immediately following the operation, before the patient is taken off the table.

In the case I have just reported, there is no doubt that transfusions played a large part in bringing about the boy's recovery.

711 *Medical Arts Building.*

## HEALTH AUDITS.*

By A. A. HOUSER, M. D., Richmond, Va.

Audits have contributed very materially in the development of the present era of industry. As a result of having these impartial analyses, new capital has been attracted to business; but the greatest service they have rendered industry has been to bring to light weak points,—giving opportunity for correction.

The greatest economic asset of any community is not its industry, but the stability and excellency of its health. There is seldom intelligent consideration given health until extensive and often irreparable damage has been done. An explanation for the delayed interest in health audits, the essential prerequisite for health conservation and development is, that the medical mind is still largely absorbed by interest in disease. Another reason may be that treatment of the sick is relatively easy as compared to the development of an intelligent interest in health. The applicant for a Health Audit has a very different mental attitude from the applicant for a Physical Examination to determine the cause of disturbing symptoms. The Health Audit patient tends to a mental outlook of constructive optimism in contrast to one of pessimism in the patient with symptoms.

The Health Audit is the only means of developing in the individual a perspective by which he may realize his normal health potentiality, which is never realized until the individual recognizes that his health is his business; and the physician's place is primarily that of a teacher, helping him to develop his health resource.

The Health Audit must maintain a routine procedure of the Physical Examination with even more exactness than in the examination of the sick; this must be supplemented by a knowledge of the patient's habits, physical, mental, and emotional.

*Read by title at the sixty-first annual meeting of the Medical Society of Virginia, in Norfolk, October 21-23, 1930.

Proficiency in the art of human understanding is an essential prerequisite for the health auditor, but art in medicine is apt to lead astray, if not inseparably connected with Science.

In viewing a cross-section of society, the need for a universal Health Audit is suggested.

Figure No. I is a graphic drawing estimating the proportions of persons who are well, functionally sick, possessing non-disabling pathology, sick, and those affected by acute infections.

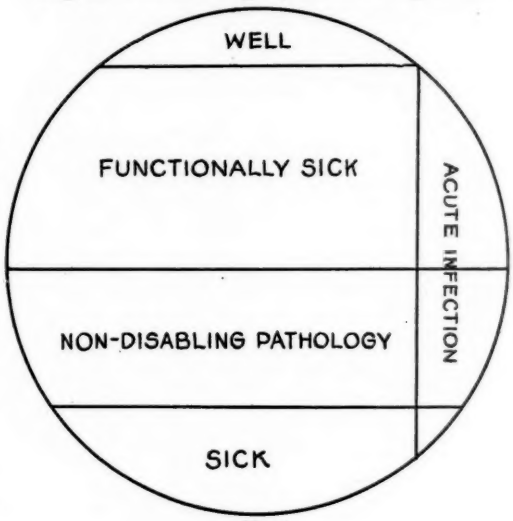


Fig. 1

The well group is very small.

The group of functionally sick are people in whom no pathology can be demonstrated, but who are not as effective as they should be, mainly on account of a faulty living technique.

There is a large class who have demonstrable pathology from slight to grave, that are still in industry, many of whom are not aware of their condition.

The sick class is infinitely larger than the group who deserve the classification of well.

Acute infections affect to some degree all classes, the well slightly, the sick less than the other classes on account of less exposure. By an analysis of medical literature, it would seem conservative to estimate that 75 per cent of medical effort is concerned with sickness, and a larger part of the other 25 per cent with non-disabling pathology. The amount directed to individual health is too small to estimate.

If 50 per cent of medical effort was diverted

from the consideration of sickness as a primary vocation to health, in time a cross-section of society would develop somewhat like Figure II, in which the well would be the predominant class.

Fig. 2

Medical schools have been slow in developing a curriculum placing sufficient emphasis upon health. In the absence of visible pathology, the physician is inclined to take the patient's word for his degree of health. A science of diagnosing health is as capable of development as has been the diagnosis of disease. It is going to be a more difficult task and likewise of more value to humanity. Some of the more important causes of premature health decline are accidents, acute infections, food errors, faulty elimination and fatigue. Fatigue is increasing more rapidly than any other of the causes of health decline. Physical and emotional fatigue is fast becoming a universal scourge. The rapid development of environmental complexity has increased so much faster than the individual's philosophy to cope with them, that a majority of the people could be conservatively classed psychopathic. While physical and mental fatigue tend to cause and exaggerate emotional fatigue, some of the more important causes are worry, fear, hurry, anxiety, anger, hate, social competition, vocational misfits and sex problems. The ability to diagnose emotional fatigue will always require some development in the art of human understanding, that closely simulates a sixth sense, but many definite scientific procedures are already available. A careful blood pressure reading over a period of five or ten minutes at different times has the possibility of being of the greatest help.

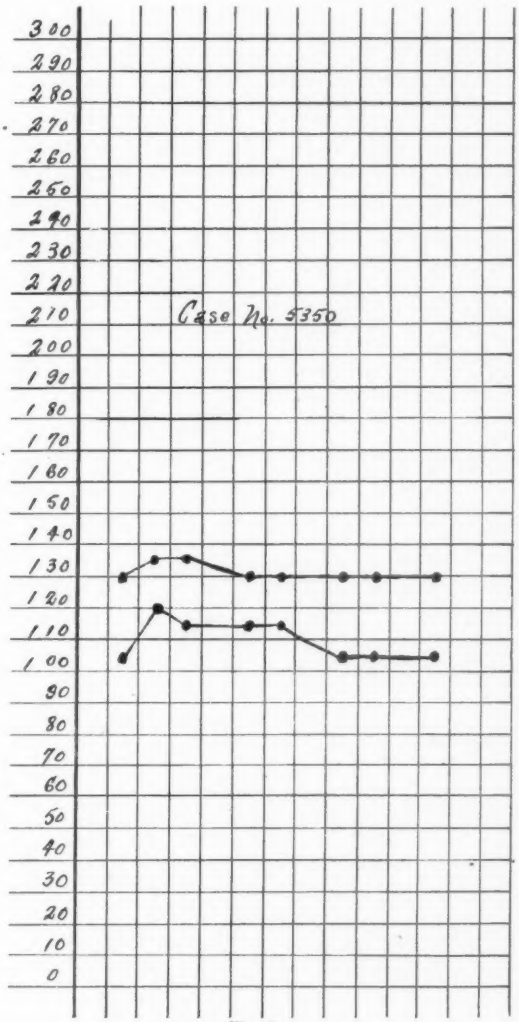


Fig. 3

Figure No. III is blood pressure tracing of a typical case of emotional fatigue. Figure No. IV is a case more exaggerated. The reading was made at the beginning of examination and repeated after examination was finished. To get information from blood pressure reading, many observations should be made over a period of five minutes or more, engaging the patient in conversation to divert attention from the procedure as much as possible.

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Emotional disturbances tend to have a variable blood pressure with variations both above and below normal and more disturbance of the diastolic pressure than systolic.

The correction of emotional disturbances is made easier by teaching a constructive health programme.

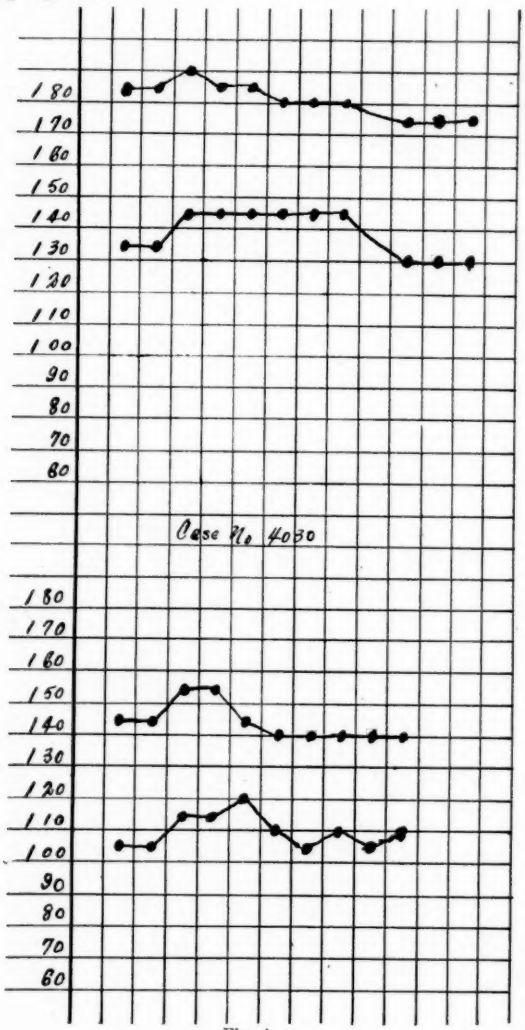


Fig. 4

There are five fundamental prerequisites for everyone to have in order to achieve a stable condition of health. First, he must develop personal honesty. As a rule people are honest with everyone but themselves, but very few people have ever given much consideration to dealing with themselves in an honest manner. They seem to have the conception that they have a perfect right to treat themselves any way and regard individual mistreatment as a virtue rather than a vice.

It is impossible to develop a high state of physical well being until the individual recognizes that his greatest asset in life is his health and that taking care of it is his most sacred and important duty.

Vocational stability is the next important achievement. The grind of industry is too depleting unless there is infinitely more to the task a man performs than the consideration of the monetary recompense he receives.

Happiness is the third essential development for health. Many have the conception that their lack of happiness is the result of outside forces, rather than any fault of their own. Outside influences may give pleasant and joyful reactions to the individual, but happiness is the result of the individual's reaction to his environment, and is produced directly in proportion to his ability to comprehend love and render service, not by being loved and served.

There are definite laws of health that must be understood and complied with in order for the human race to be well, that are just as essential as the laws governing the successful handling of any other animal, yet the successful stock raiser is very careful in seeing that his herd has every opportunity to develop a high degree of biological perfection, and often fails to give his own organism any consideration at all.

In addition to this, an intelligent individual requires a periodic Health Audit in order to dispel medical fear and develop health optimism. The Health Audits should acquaint the individual with his physical and mental potentiality.

Figure No. V is a chart outlining the normal curve of physical and mental potentiality. It presumes one hundred years should be the average life. Physical development reaches its peak at twenty-five years of age and then gradually declines. The period of greatest mental growth is over the same period, which might be termed the period of emotional development.

Mental growth may continue to develop in a rather rapid manner until sixty-five or seventy years of age, which should be labeled as the utilitarian period, and it may continue to grow gradually upward until the end of

life. This is the philosophical period. In order for mental development to continue, the individual must have the perspective of his mental potentiality, and must respect the curve of physical decline. Physical fatigue interferes with mental growth. The individual's value as he passes physical maturity very rapidly changes from a physical to a mental value.

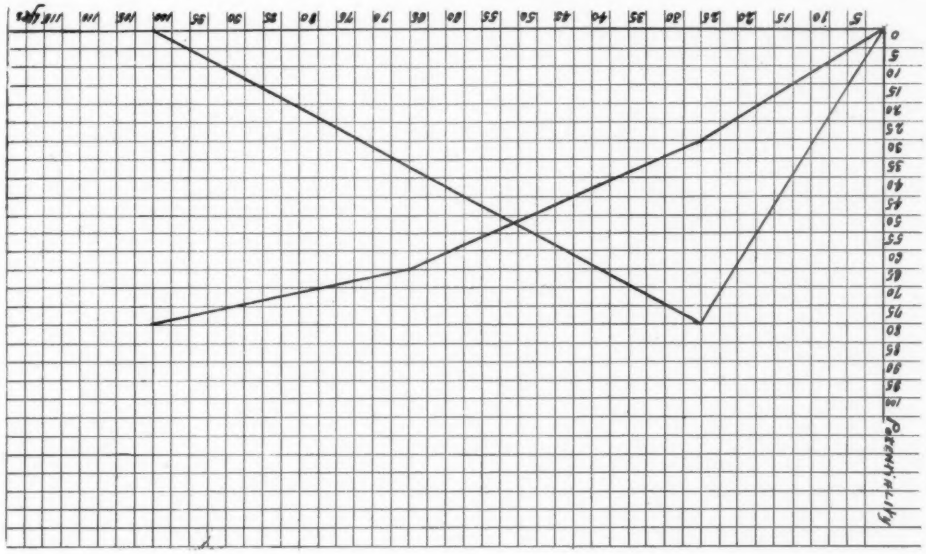

Fig. 5

A discouraging feature of the Health Audit for a beginner is the time required to observe individual improvement. Charts Nos. VI and VII represent two cases that have had a series of periodic Health Audits.

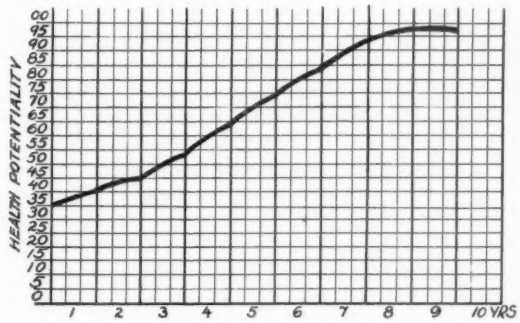


Fig. 6

Chart No. VI is a case that has been gone over each year for nine years. Small improvement was noticed in the first two years, very marked the third and fourth, and a tendency to improvement each year since.

Chart No. VII is a case that had three yearly audits without much improvement first two years; the third year a very marked improvement. Then three years elapsed without an Audit, in which the general health condition was not as good as when first seen, and an unusual response to the audit of the seventh year. These two cases are very characteristic of my experience with the periodic examination.

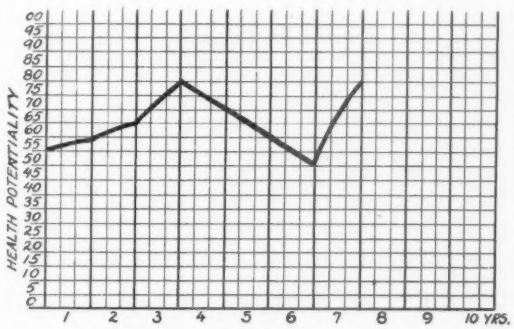


Fig. 7

The third and fourth years are usually the periods for very much greater response than the first and second. The difficulty in health development is the simplicity of the more important health habits and their entire freedom from the spectacular—which probably explains why it takes the average person two or three years to get rid of medical fear and to synchonize life with a technique of living

that is Devoid of Formula; Tending to Establish Harmonious Relationship With Normal Biological Laws.

*Professional Building.*

## STREPTOCOCCUS VIRIDANS ENDOCARDITIS—A TREATISE.*

By ARTHUR D. PARKER, M. D., Norfolk, Va.

Of all the known types of bacterial endocarditis, that associated with the non-hemolytic streptococcus viridans is by far the most common and the most interesting. This disease, formerly considered rare, is frequent enough in incidence to demand consideration when we are confronted with any long continued febrile condition, the nature of which has not been determined.

This form of endocarditis is also termed sub-acute bacterial endocarditis, endocarditis lenta, etc., to distinguish it from the acute varieties of bacterial endocarditis, which usually are due to the more virulent strains of hemolytic streptococci, to staphylococci, pneumococci, and other pyogenic organisms, in which the endocardial lesion is apparently incidental in the course of an overwhelming blood stream infection of comparatively short duration, such as the ordinary septic conditions with which we are all familiar.

In the viridans cases, we are dealing with an organism of low virulence, and the resultant lesion on the heart valve is obviously the important focus from which numerous emboli are discharged into the blood stream. The portal of entry of this organism prior to its lodgment on the heart valves is often very difficult if not impossible to determine, although in many cases a recent history of respiratory infection, tonsillitis, chronic otitis media, and dental infection was obtained, and some definitely dated their symptoms following extraction of a tooth. The streptococcus viridans is commonly found associated with such conditions.

One thing appears certain, viz., that endocarditis of the viridans type is conditioned upon a previously damaged heart valve, and particularly a valve that has been damaged by rheumatic fever. In this connection it is interesting to note that non-hemolytic streptococci have frequently been recovered by blood culture from undoubted cases of rheumatic fever. The organism in these cases, however, differed from those obtained in cases of viridans endocarditis in that the complement-fixation test, which is uniformly present in the latter, was absent in the rheumatic cases and for this reason was considered a secondary invader in the course of rheumatic fever.

The symptomatology of the disease, aside from its toxic manifestations, is due to numerous emboli being swept from the affected valve into the blood stream and lodging in various organs—the kidneys, spleen, skin, and brain most often. The friable vegetations on the vale readily explain the frequent embolic phenomena. The mitral valve is most often affected, the aortic next, but no valve is exempt. The most plausible explanation of this is the fact that the mitral more so than any other heart valve is the seat of damage subsequent to rheumatic fever.

The onset is usually very insidious and for this reason tuberculosis is frequently suspected. The patient at this time is ambulatory and complains of weakness, lassitude, and perhaps some loss in weight. Careful examination reveals nothing other than an accelerated pulse, slight or no elevation of temperature, and a mild anemia. A heart murmur may or may not be heard. Later, the above symptoms become exaggerated and, added to these, there might be frequent night sweats, chilly sensations and a persistent cough. This condition may obtain for several months before embolic phenomena or a chance blood culture reveals the true nature of the malady.

As time goes on, a few months to a year or two, most often terminating within fifteen months, the patient becomes definitely worse or there may even be remissions for months during which time recovery has apparently taken place. Usually the clinical picture becomes more definite with loud heart murmur, some enlargement of the heart, signs of cardiac decompensation, a peculiar yellowish tint of the skin, described by Libman as *cafe au lait*, anemia, leucocytosis, which may reach 20,000 or more, splenic enlargement and various embolic manifestations, such as pain over the spleen, kidneys, or abdomen, and in so far as the kidneys are concerned an associated albuminuria and red blood cells in the urine. Likewise, dependent upon the size and location of the emboli, there may develop a hemiplegia or monoplegia, or sudden plugging of the lar-

*Read before the Norfolk County Medical Society, February 16, 1931.

ger vessels to the extremities with consequent pain, coldness and loss of function of the affected member. Any of the above named conditions may, so far as the patient can tell, mark the onset of the disease. I recall in particular one patient walking into the clinic whose sole complaint was sudden loss of vision in one eye, which turned out to be due to an embolism of the central artery of the retina incident to this disease. Another was admitted with right lower abdominal pain and tenderness, fever and leucocytosis, which was proven later not to be appendicitis. In children, though infrequent, the disease is often attended by cerebral accidents, such as a hemiplegia or monoplegia.

Probably no affection known to medicine offers a more striking contrast with its absence of signs in the first stages, which may be months, and the perfect clinical picture it presents later. At this time diagnosis is easy and blood culture is hardly necessary. To Libman, more so than to any other, we are indebted for establishing this clinical entity.

The fever, when present, is markedly irregular and daily remittent. Chills and sweats later on are frequent. The pulse is persistently rapid and in the beginning, more so than the temperature and general condition of the patient would seem to warrant. For this reason a heart murmur though present may be easily overlooked. Later in the disease the murmur is unmistakable and very pronounced. Coupled with a history of rheumatic fever it is very suggestive. The spleen is palpable in a large percentage of cases, especially during the latter part of the disease. It is of distinct value in diagnosis particularly if found in the early stages. Petechial hemorrhages are extremely important in completing the clinical picture and unless repeated examinations are made they will more than likely be missed. They are often found on the buccal mucosa and on the skin about the upper chest where they may appear from time to time as tiny pin-point red dots which fade in a few days. On the skin one must be careful to distinguish them from small red nevi. The conjunctiva at some time or other will show these small hemorrhages, and here they are larger, irregular and often have a flat white center. These likewise fade in a few days. The eye-grounds frequently will show large and small retinal hemorrhages.

The anemia is rather marked and progressive, the hemoglobin often being decreased much out of proportion to the decrease in the red cells. A peculiar yellowish tint of the skin is associated with this.

The kidneys may be affected by gross infarcts, a diffuse glomerular nephritis or characteristic embolic glomerular lesions which, according to Baehr, are found in no other form of endocarditis except the sub-acute bacterial type in which the streptococcus viridans is the cause in about 95 per cent of the cases, and rarely are found in any other condition.

Death usually occurs from within a few months of the active onset to a year or possibly two years and is most often due to cardiac decompensation, toxemia, and anemia.

Blood culture is frequently negative and in suspected cases should be repeated often. This is probably accounted for by the presence of bacteria in the blood stream only for a short time after being discharged from the valve, to different methods of technique in making the culture, and to the fact that many cases apparently go through phases described as bacteria-free during which time the organism cannot be recovered from the blood.

The lesion on the valve is productive, as might be expected, from a low grade infection. The surface of the vegetations is composed of blood platelet masses invaded with colonies of organisms while the patient is in the so-called bacterial stage. Deeper in the vegetations the organisms tend to disappear, and closer to the valve leaflet or adjacent endocardium we find active fibroblastic invasion with resulting dense scarring; in other words, there is a definite tendency to heal.

Libman especially entertained the view that the disease is far more common than we suppose and that many cases are never recognized and some go on to recovery, in spite of the fact that those cases which are recognized and yield a positive blood culture are so uniformly fatal. In support of his contention it might be mentioned that Oille, Dettweiler and Graham reported twenty-three cases from which non-hemolytic streptococci were recovered by blood culture. These were all mild cases running a subfebrile temperature, but exhibited no embolic manifestations. However, quite a few had heart murmurs. All of these recovered. Salus reported eighteen cases similar to these. Herrick and Warren reported a

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smaller group apparently in the same category. This and the report of an occasional recovery in undoubted cases, such as those of Capps who reported six recoveries extending from six months to eleven years, surely lend weight to the argument.

The age incidence of the disease corresponds in a great measure to that of rheumatic fever, occurring most often in adolescence and early adult life. However, it has not infrequently been reported in young children.

As for treatment of the condition, nothing has been found effective. The use of dyes and mercurochrome intravenously, transfusion, vaccines, and immunized sera have been of no avail, and the latter have been condemned as harmful by some workers. Capps, who, as noted, reported six recoveries out of eight cases, used daily injection, usually intravenous, of cacodylate of soda extending over a period of seven weeks to four months. He stressed the importance of using freshly prepared drug and pushing it to the limit of tolerance, as evidenced by a strong garlic odor of the breath or diarrhoea.

Recently, in regard to etiology, the question of allergy has been raised by various writers, inasmuch as endocarditis can be readily induced experimentally by repeated injections of relatively innocuous doses of streptococci, or by a single injection of these organisms after the animals have been rendered hypersensitive by previous inoculation of horse serum. Initial injection of the living organism or their injection prior to being made hypersensitive to horse serum did not result in endocarditis. The exact method of production of this disease and the various factors responsible obviously are in doubt.

Prophylactic measures, to the extent of cautioning all patients known to have chronic valvular defects to keep themselves free from focal infection as far as possible, such as infected teeth, tonsils, etc., and the removal of suspected foci if encountered during the disease, at present seem to be all we can do to combat this condition. However, our present knowledge of the disease is sufficient to stimulate our thought toward more effective preventive measures, early diagnosis and cure.

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211 *Taylor Building.*

## OFFICE TREATMENT OF EARLY ENLARGED PROSTATES.*

By WM. D. GOODMAN, M. D., Washington, D. C.

The broad use of the word "hypertrophy" of the prostate gland means an enlargement of one or more of its lobes. The exact etiology of this is practically unknown just as is the cause of uterine fibroids. From my standpoint, chronic congestion is the most important cause. It is interesting to note that in New York City statistics were collected in a series of 200 patients to see whether gonorrhea had any bearing on enlarged prostates and it was found that a greater percentage had hypertrophy of the gland who had never had any venereal disease. This would disprove the common belief that gonorrhea is an underlying issue. It has also been brought to my observation that most prostatics are highly organized and temperamental men—the so-called Intelligentsia. Age plays a most important part, as we find 50 per cent of men over fifty years old have some enlargement of the prostate gland to a greater or lesser degree.

The early symptoms are frequency of urination, nocturia, and often dysuria. Dull aching pain over the sacral area sometimes radiates down both legs, while there is occasionally pain and a full feeling in the perineum between the scrotum and anus. As these symptoms advance, the man will tell you that he has difficulty in getting the urine out of his bladder and will make an effort to squeeze out the last few drops. The urinary stream becomes small in calibre and lacks force. The later symptoms are partial or complete urinary retention with great bladder discomfort.

The diagnosis of enlarged prostate gland cannot be made by the symptoms alone. Any vague complaint from a male patient over fifty

*Read before the Fairfax County Medical Society, November 6, 1930

years old referable to the sacral, lower lumbar or perineal area should point the finger of suspicion to the prostate gland. Then, by rectal, urethral, and cystoscopic examinations we can be more certain of our diagnosis. In my opinion, the cystoscopic is the most valuable. However, there are certain cases in which this examination cannot be done and one will have to rely upon rectal examination, symptoms, and the amount of residual urine. The cystoscope will tell you the degree of encroachment not only in the bladder but into the posterior urethra, and will also show if there are stones, diverticuli, or tumors of the bladder. Rectal examinations will reveal the degree of enlargement of the two lateral lobes, also their consistency, and will give you a lead whether there is any possible suggestion of malignancy of the gland. In cases of suspicious malignancy, an X-ray of the bony pelvis should always be done for possible metastasis.

In taking up the treatment of prostatic hypertrophy, my experience has taught me that some early cases can be relieved without operation and made permanently comfortable. This is what I would like to bring to your attention, so that you may give help to your early prostatics. The following modes of office treatment do not require any special training, and can be used by the average physician in general practice. In the main, you must direct your treatment to relieve prostatic congestion and secure good drainage through the urethra. The following methods, or their combinations, are within your grasp and can be used at your own discretion, evaluating them according to their beneficial results.

First: Prostatic massage, i. e., by index finger per rectum.

Second: Diathermy of the gland, i. e., sending electrical heat between rectum and pubis or between sacrum and pubis. This sends heat directly through the prostatic area.

Third: Hot rectal saline douches, 110° F., i. e., avoiding enema results.

Fourth: Electrical heat, i. e., direct on gland per rectum, such as the Bransford Lewis apparatus.

Fifth: Hot sitz baths, i. e., sitting in a tub of hot water for five minutes, followed by a cold rub with a Turkish towel.

Sixth: Bladder sedatives per mouth, i. e., Elixir buchu and hyoscyamus compound with urinary antiseptics, i. e., hexylmethylenamine.

Seventh: Dilating the posterior urethra with sounds, or the Kollman dilator.

Eighth: Correcting certain sexual habits, i. e., avoid prolonged or excessive intercourse.

Ninth: Advice as to the fluid intake, namely, to get the proper fluid quota in the early part of the day, i. e., before 12 o'clock noon.

Should our patient fail to improve on any of the above treatments or their combinations and the case is progressing to partial or complete obstruction, we are compelled to give relief by some operative procedure. The Punch operation offers great possibilities when practicable. Suprapubic prostatectomy, either one or two stage, has been my operation of choice. In my opinion it is an easy operation, but it is not an easy matter to lower the mortality rate, and this depends on how the patient has been prepared before the operation, and how he is handled after the operation. Urologists have come to depend on the blood chemistry, functional dye tests, cardiographic readings and blood pressure findings, and I have found it best that all pre-operative and post-operative treatment be carried out with the help of the internist.

502 *Farragut Apartments.*

## THREE YEARS EXPERIENCE WITH GOAT'S MILK IN INFANT FEEDING.*

By DANDRIDGE P. WEST, M. D., Norfolk, Va.

In presenting this subject for your consideration I respectfully invite your attention to three factors concerned:

*First*, The goat itself;

*Second*, Goat's milk; and,

*Third*, Our experience at the Florence Crittenden Home over a period of three years.

### The Goat

The much ridiculed goat of our back alleys is rapidly disappearing, and in her place has come to stay the trim well-bred milk goat of Swiss and English origin, an attractive animal in appearance, and highly efficient as a milk producer. She has entered the field of American stock breeding in response to several different and definite needs of modern American life.

*Read before the Norfolk County Medical Society, October 28, 1930.

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The passing of cheap and abundant land, the consequent crowded and intensive conditions of agriculture, and the further consequence of soaring prices for dairy products, have created a demand for an animal that produces milk more economically than the cow and under conditions where a cow could not be kept. This demand the well-bred goat fulfills.

The spread of tuberculosis, a disease whose germ is often carried by the cow and her milk, creates a demand for a milk producing animal that is resistant to this disease. Again the goat answers the need.

The statistics of infant mortality, at last frankly faced by our modern leaders of social welfare, call for a food that will save the lives of children who cannot survive on the general substitutes for mother's milk. This greatest need of all is best filled by the milk of goats, with its close approach to human milk and its beneficent curative qualities. One cannot afford to remain in ignorance of such a real factor in our present agricultural and economic life.

The history of the goat in the Old World, in Asia, Africa, and Europe, goes back as far as the history of man himself. The goat seems to have been one of the first animals to be domesticated. It is found associated with man in the earliest traces of human existence, and its place of economic importance has been persistent and unquestioned throughout the recorded history of these continents.

It is curious that since the coming of the European races to this continent the milk goat has played so small a part in the development of American life. The domesticated goat was unknown to the North American Indian. But in the records of the earliest settlements in New England and Virginia the goat plays no small part. Goats were included in the list of animals brought over by Captain John Smith and by Lord Delaware. Frequent mention is made in the early annals of the colony of the fertility and rapid increase of the milk goats. In 1620 we find the record of a contract for the shipment of 400 choice milk goats from Wales to Virginia. Similarly, in the record of New England we find many references to goats and to the methods by which they were handled. But by the middle of the seventeenth century goats appear less and less frequently in the records of these two typical colonies, while the rapid growth of interest in other forms of live stock, especially horses and cows, is indicated by abundant data.

It is plain, then, that in spite of these records of goat importations the interest of the settlers centered rather early in dairy cows. In the subsequent history of American agriculture we note the rapid and admirable development of the various breed of cows, while the goats, few in number, were until recently pushed to the background. They became the objects of scorn and derision, leading a precarious existence for the most part in the suburbs of large cities, in the hands of the Irish and Mediterranean immigrants of the poorer class.

It is these outcast inhabitants of the back alleys and outskirts of our cities, the neglected descendants of the English and Welsh stock of our earlier settlers, that have come to be known as the "native" or "American" goat, answering also to the name of "common" or "scrub" goats, to distinguish them from our more recent importations of valuable and highly bred milk stock.

Why were they so indifferent to the goat, these early settlers of the Atlantic seaboard? Why did the milk goat, elsewhere so honored and valued, fall into such obscurity in the United States? The answer is found in certain fundamental laws which govern the development of agriculture as a whole.

Goats attain their greatest importance at the two extreme stages of agricultural progress—the first and the last—the primitive nomadic stage and the final crowded, frugal, and highly intensive stage. During the first stage agriculture is still undeveloped and unstable, and herds must depend for their sustenance upon range feeding rather than upon the products of the tilled fields. Into this stage the hardy, light footed goat fit admirably, sustains herself successfully, and makes a valuable return for the efforts of the primitive husbandmen. The development of the dairy cow, on the other hand, does not attain importance until conditions are stabilized to such an extent that an abundant and dependable amount of feed can be produced for her, to supplement her own efforts at forage.

Such conditions existed and were admirably developed in England and Holland, the homeland of most of our first colonists, at the time that our country was being settled. These colonists, trained husbandmen, found in their new homes for the most part such generous

soil, such favorable climate, and such an abundance of cheap and fertile land, that the maintenance of the cow, from the beginning of our history, was easily provided for and assured. In such a type of agriculture the dairy cow found conditions the most favorable possible for her development. Therefore, it is not strange that the goat, as a milk animal, fell into oblivion in the United States, although she maintained unbroken her prestige in the more crowded civilization of the Old World.

Meanwhile, in the vast countries to the south and west of the colonies a very different kind of goat history was in the making. Mexico, California, and the adjacent regions were being explored and settled by the Spanish, a race of people who in their native home, with its mountainous regions and semi-arid areas, had always held in high esteem the little milk animals who fitted best into the environment of their country. Wherever the Spanish settlers went, the goat followed them. She found in this vast new land of mountains and high plateaux conditions not unlike those of her native home. Whether she was turned loose to go back to the care of Mother Nature and her own wits, or whether she remained in the care of man, she prospered and increased. Lacking expert care, she increased, to be sure, in numbers rather than in excellence of type. Still it is remarkable that in the great bands of "native" goats that range Mexico and the Southwest today, there are many animals that persistently maintain the dairy type, and that respond to care and attention with an excellent yield of milk, although in the semi-wild conditions of their life for the past two hundred years they have been bred solely for their meat and hides. Yet these multitudinous descendants of the Spanish goats of the early settlers were destined to play an important part in the development of the milk goat industry of the United States, whose own goats, few in number, were despised and neglected.

With the coming of the twentieth century, the wiser leaders of our agricultural life were already beginning to see ahead of us those crowded and intensive conditions in which the milk goat again comes into her own as the superior of the dairy cow. For where space is at a premium, and feed is costly, the well-bred goat proves her ability to produce milk on smaller rations per gallon than any cow, and she fits happily into many situations where her larger and more clumsy rival could not exist.

So, in spite of the low estate into which the milk goat had fallen in the United States, we find as early as 1898 that the Department of Agriculture was aware of her possibilities, and was making an effort to rouse interest in the subject. So poor, however, were the prospects offered by the stock in this country, now called the "native" or "American" goat, that the eyes of the champions of the milk goat turned towards Europe, and especially towards Switzerland, as a source for supplying the need which they foresaw.

As a result of these investigations, in 1904 the first importation of Swiss goats arrived in the United States,—ten Saanens and sixteen Toggenburgs. In the following two years thirty-nine Saanens and 141 Toggenburgs were imported. After that date, the United States, because of the prevalence of hoof and mouth disease on the continent of Europe, placed a quarantine on live stock from abroad, and further importations ceased.

Those Swiss goats which had arrived before the embargo was established were widely dispersed by sale throughout the United States. Although many of the original animals died shortly after their arrival because of the hardships of the trip, for the most part they did well, and their beauty of type and heavy milk production won favor for them wherever they went.

The four types of goats that go to make up "goat aristocracy" are the Toggenburg, Saanen, Nubian, and Alpine. The Toggenburg and Saanen are closely allied in origin and type and come from respective valleys in Switzerland of the same name. The Saanen is the type of choice on account of larger production of milk and which is not quite so rich. The Nubian is of English descent, while the Alpine is the only one of the group which retained through its earlier adventures its pure strain. The reason is obvious: During the wars of Napoleon, goats found in the mountains by soldiers on the march were driven down into the valleys and kept for food and milk. The Alpine goat, however, ranged high in the cliffs, impassable by humans, and remained, therefore, unmolested, thereby preserving their strain.

The systems of breeding I will pass over.

While the goat has often been accused of

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spreading diseases to human beings, especially Malta fever, I can find no evidence to bear this out except in a few isolated cases in Mexico and Texas. On the contrary, with the exception of a marked susceptibility to the common intestinal parasites, the goat is a very healthy animal. As is generally known, the goat is practically free from tuberculosis. The late Dr. Fast, Superintendent of the Nebraska State Hospital, published an article a short time before his death, going so far as to claim that in his opinion goats were not only immune to tuberculosis but that their milk acted as an immunizing agent for those using the milk.

### The Milk

What are the factors that account for the sudden rise to favor of the long neglected milk goat? There are several, but first of all in importance is the growing realization that goat milk has a special quality and value quite different from that of cow milk. Understand, I do not mean to say that the goat will ever be a competitor of the cow, but the milk goat has a distinctive place and the industry is a specialty in itself.

In a letter to us from the late Dr. Harvey Wiley, he says, in part, "Upon the whole I think the health of the infant deprived of its mother's breast and the growing child would be improved by the general use of goat's milk. I think there should be a concentrated effort to introduce more numerous and larger herds of goats into this country for this purpose. The milk goat is a very different animal from the scrub goat with which we are familiar."

*The Taste:* In the great majority of cases goat milk cannot be distinguished from the best cow milk, except by its superior richness and its pure white color. The common prejudice against it probably has its origin in the fact that until lately the goat in the United States was for the most part in the hands of ignorant or careless people, who did not keep the goat's quarters properly clean, or who fed them improperly, and, worst of all, who often kept a buck, or billy goat, with or near the does. A properly cared for doe is absolutely free from odor, even more so than a cow; but this is not true to the same extent of the buck, especially in the breeding season. The odor of uncleanly quarters, or of the buck, is promptly absorbed by the milk, and gives it such an unpleasant taste that many persons are sure they could never use it. This unfortunate prejudice can usually be dispelled by one glassful of sweet, clean, rich milk from a goat that is properly handled. To one who has had the opportunity of using goat milk, cow milk becomes more or less distasteful, seeming thin and flat to the palate accustomed to the more delicious milk of the goat.

*The Richness:* The Nubian goats test very high for butter-fat, running often from 6 per cent to 8 per cent. The heavier milking Swiss breeds run from 3.5 per cent to 5 per cent. Our tests at the Florence Crittenden Home, using pure Saanen goats, run from 4 per cent to 4.3 per cent. Among other factors, goat milk does not carry the germ of tuberculosis, as does so much cow milk, because the goat is practically immune from that disease. The city of San Francisco has a contract for a daily supply of goat milk for the tubercular patients of its great City Hospital, and its usefulness in fighting the disease has been well tested and proved.

The cream is a mass of fat globules and each globule is a mass of butter-fat. The walls of the capsules in goat's milk are much thinner and the capsules much smaller than in cow's, and are, therefore, more easily digested. The casein in goat's milk is of much smaller atoms and is digested in about one-third of the time taken for digestion of casein or curd of cow's milk. Goat milk is alkaline, while cow milk is acid, a matter of great importance to patients suffering from hyperacidity.

### Our Experience at the Florence Crittenden Home

Our experience actually began five years ago. As you all know, the Florence Crittenden Home is one of our charity institutions, depending largely upon donations, private or the Community fund. The Home has been too modest in its appeal for needs, with the result that it has been rather pushed to the background and the yearly appropriations from the Community fund has been cut very sharply. The economic question, therefore, has been a very great one, and wherever a cut to save can be done without material injury to the patients the effort has been made. The milk item, of course, is a large one. With the hope of reducing the expense of milk, the goat came to our minds as a possibility. The idea seemed

practical. And so through the keen interest and wonderful work of Miss Clare E. Marshall, Superintendent of the Home, the idea began to take form.

Our first doe was obtained through an Arkansas goatery and was one that was bred from a very famous buck. Through the courtesy of the U. S. Bureau of Animal Industry at Washington we mated our doe with their highly bred bucks until we could get a start. During the first year $1,000.00 was invested into this movement, and during this period we were able to save about the same amount.

Since that time we have sold off and bred until we now have a herd of throughbred Saanen goats giving sufficient amount of milk daily for the feeding of all the infants as well as general use in the Home. This represents a big saving in milk bills, and through the sale of mature does and young kids a material income is further realized.

Without burdening you with a lot of statistics I will give you at this time a general summary of our work.

First, it might be well to mention the type of material we have to work with. Most of you know the object of the Florence Crittenden Home, and it is well to remember that only primiparas are admitted. Moreover, this particular home also receives transfers from other Homes. Not all of our babies are born here. The mental scale of the mothers runs for the most part very low, while the geneological history is almost invariably bad. To begin with, then, the offsprings making up our material to work with are not the best pickings. We work with the belief, however, that a child born of poor inheritance, but given the best of environmental care afterwards, often turns out to be a better individual than one who is born of good inheritance but neglected afterwards.

For the past three years all infants and children are fed exclusively on goat milk so far as milk is concerned. This milk is gotten under the most careful hygienic measures, bottled and chilled immediately. It is never pasteurized or sterilized.

Throughout the year an average of twenty babies per month is maintained, some overlapping, of course.

So far we have found no baby who could not handle goat milk in dilutions. All babies entering the Home from elsewhere and who show intestinal upsets of various character, especially diarrhoea, have all responded well to goat milk in the same manner.

Only one case of rickets has developed in the Home among our own babies.

In short, we do not believe goat milk to be a panacea for all babies' ailments, but with the good environment, fresh air, and sunshine, we have been extremely fortunate.

In conclusion, we believe high bred fresh goat milk is an invaluable aid in the feeding of any baby and especially to weak and sickly ones.

We believe that goat milk can be made practical and profitable to any institution caring for infants and children.

And, finally, we believe the well-bred milk goat, long-suffering and neglected, will rapidly come into her own and establish a well-earned place in pediatric history.

(Acknowledgement is respectfully given to the helpful work of Irmagarde Richards, in his "Modern Milk Goats," and to Miss Clare E. Marshall, Superintendent, Florence Crittenden Home.)

## THE EARLY DIAGNOSIS OF SYPHILIS.*

By W. W. S. BUTLER, M. D., Roanoke, Va.

This paper is written because there is such a prevalent custom of using local treatment for genital lesions until a positive Wassermann has developed. A brief summary is here made of about one hundred consecutive patients suspected of being luetic.

In fifty-two, a dark field examination was made, showing twenty-four positive and twenty-eight negative. In twenty-seven lesions, the diagnosis was made by a secondary eruption or other clinical evidence. Of seventy-nine genital lesions, 65 per cent were positive; my record does not follow these long enough to form an idea of what per cent showed positive in subsequent developments in the remaining 35 per cent. In this group, many apparently insignificant lesions and the abrasions associated with the oedema of acute urethral infections showed the spirillum of syphilis. A further illustration of the number of minor conditions which are really luetic is the large number of positive Wassermanns found in the routine blood tests taken on admission to the hospital. Stokes advises that even with repeated negative dark field examinations, a case should be followed four months after the

*Read before the Southwestern Virginia Medical Society, in Wytheville, March 19, 1931.

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initial lesion before a diagnosis of chancroid is made instead of chancre.

The difference in point of view of the men interested in general medicine rather than in syphilis is brought out by Stokes in reports on venereal sores in the World War. Of 3,400 reported by the American Expeditionary Forces, 24 per cent were reported as luetic; in the British and French Armies with a series of 27,000, 77 per cent were found positive. The difference is explained by the fact that the latter group were examined in concentration hospitals by experts while the Americans were examined by field officers.

The technique of a dark field examination is easy if a few precautions are observed. The earlier the lesion and the less time the patient has to develop a resistance, the more numerous are the organisms. As the resistance and the positive Wassermann become stronger, the more difficult it becomes to find the organism. The first two weeks are the best and after the fifth week a small number are present. Any antiseptic, particularly calomel, causes temporary disappearance of the spirillum and frequently heals the lesion. For collection of the specimen, the surface of the lesion is mopped off, but not caused to bleed, and in a few minutes serum appears in which the spirilla are found.

Dr. Kollmer has examined the serum from the ulcer, when the organism is present with 100 per cent positives and the method has the advantage that it also shows positive where antiseptics have been used causing the dark field examination to be negative.

What have we gained by a prompt recognition of this condition? Will a few doses of neoarsphenamine cure the patient? This is the first impulse and the lay opinion. If this view cannot be corrected it is better not to recognize the condition but let secondaries come and allow nature to develop a resistance. Animal inoculations show that adjacent lymphnodes are involved before the point of inoculation breaks down and we cannot say how extensive the infection is, even in the very beginning. From the nerve cases with which I have been associated, a high per cent have no memory of an initial lesion or, if so, a short period of treatment. The mild infection is the one which has the incurable mental and spinal involvements in later years. For this reason, the negroes and the class who develop secondaries have a smaller per cent of nerve complications.

If this is so and the early treatment takes away the stimulation for development of an immunity, then it is more than ever important that once the treatment is started, it should be carried through. Moore and Keidel, in an analysis of 402 cases when courses of arsphenamin and mercury were given with no rest intervals during the first year, give most interesting light on this very question. The cases are then in two groups, the early ones with a negative serum and the later or positive serum group. After one course of treatment, i. e., up to eight injections of arsphenamine, relapses occurred in 76 per cent as compared with 90 per cent in the second group. After three courses, i. e., from thirteen to twenty injections, the first group showed only 14 per cent relapses as compared with 50 per cent in the serum positive group. While in the group receiving four courses, i. e., twenty to forty injections with corresponding mercury, the serum negative gets 100 per cent cures against 60 per cent in those who waited for a positive Wassermann.

It cannot be too strongly urged that the fresh untreated lesion is the one from which the promptest and most accurate diagnosis can be made and the time which offers the best chance of cure. The ready use of calomel powder or burning the lesion will often cure it but will do an irreparable harm to the patient.

28 *Franklin Road, Southwest,*
*Medical Arts Building.*

## URETERAL MEATOTOMY BY FULGURATION AND INCISION: CASE REPORT.

By C. I. SEASE, M. D., Richmond, Va.

A few years ago after a ureteral meatotomy with ureteral scissors, I was rather alarmed at the bleeding that followed. Then, several months ago, I fulgurated an orifice and the patient complained of pain in that kidney for three or four days, suggestive of a partially blocked ureter from edema. I thought then of combining fulguration with incision to overcome hemorrhage and possible blockage from swelling.

A suitable case presented itself November 17, 1930. The case is reported briefly as follows:

Mrs. C. L. K., white female, married, aged 25, II Para.

*C. C.:* Pain in right lower quadrant, frequency.

*P. H.:* Patient had pyelitis of pregnancy with first baby at seven months, three years ago, which was relieved by irrigating the kidney pelvis. She also had acute pyelitis near term with second pregnancy, but was delivered, after being ill ten days, with prompt improvement. Since birth of second baby, six months ago, she has not felt well, and has been conscious of discomfort in right kidney region from time to time.

*Present illness* began three weeks ago with acute sudden onset, severe pain in right kidney, radiating down the course of the ureter, extending down the thigh to the knee, severe chill, high fever, vomiting. She was very ill for ten days but gradually improved under expectant treatment. She states that X-ray taken at that time was negative for stone. She has been out of bed a week and now is conscious of a sharp cutting pain on certain sudden movements, such as turning over while lying down, or sitting up, or extending the right leg.

*Examination:* Fairly well nourished white woman about twenty-five years of age, showing evidences of recent severe illness, such as pallor, dark rings under eyes and appearance of physical weakness.

*G. U. Examination:* A catheterized specimen shows red blood cells and pus cells are abundant.

*Bimanual Examination* shows uterus and adnexa normal. On careful palpation, a hard object about the size of a pea can be felt in the vault of the vagina and appears to be in the bladder, a little to the right side. Pressure produces the characteristic cutting pain she has had for sometime. This is thought to be a stone in the mural portion of the ureter. An attempt was made to milk it into the bladder without success.

*Cystoscopy* reveals evidence of an intramural stone in the right ureter as illustrated in Figure 1 and Figure A. It appears to be about one-half inch from the orifice.

I immediately fulgurated the mucosa along the course of the ureter up to the bulging caused by the stone. Then with a pair of ureteral scissors I made an incision almost to the stone. (See Figure B.) This was done under 1 per cent cocaine anesthesia, in the office and with very little pain. The patient went home, about forty miles in the country, that afternoon. There was no bleeding, and no evidence of blockage. In fact, practically no discomfort, as the patient never went to bed as a result of the treatment. A few days later, she sent the stone to me, having passed it during the second night after the treatment. Three weeks later cystoscopy showed the ureteral orifice had healed and appeared somewhat as illustrated in Figure C. Figure D is a photograph of the stone.

This case is reported, not with any claim to originality in combining fulguration and incision for ureteral meatotomy, as I feel sure it has been used and probably is being used frequently by men doing a large amount of this work. So far, however, I do not recall seeing any mention made of it in the literature. I found it a very useful and comfortable procedure in this case.

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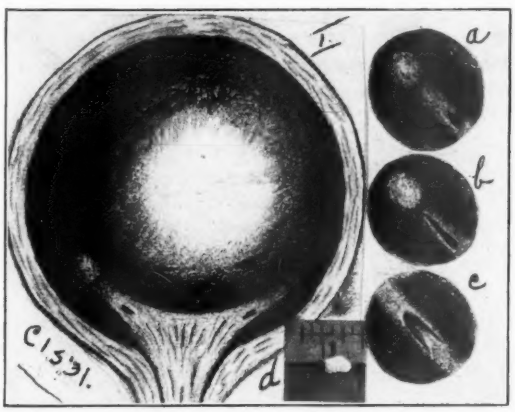


Intra-Mural Stone. Right ureter. Mrs. C. L. K.

## STUDY OF THE NORMAL FUNCTION AND PATHOLOGICAL CONDITIONS OF THE THYROID GLAND.*

By J. LEWIS RAWLS, M. D., Suffolk, Va.

A study of the normal function and pathological conditions of the thyroid gland has caused many theories to be advanced, but in the last few years it appears that the scientific world is getting nearer a solution of some of these problems.

Over a hundred years ago exophthalmic goiter was described beautifully by Parry, a few years later by Graves and others, but not

*Paper read before the Southside Virginia Medical Association, Petersburg, Va., March, 1930.

until 1913 was there a great advancement made when Plummer, of the Mayo Clinic, came out with an article differentiating adenomatous goiter from hyperthyroidism and exophthalmic goiter, establishing at the same time the foundation for the administration of compound solution of ioline (Lugol solution) in the exophthalmic type. He based his theory for the use of iodine in the exophthalmic goiter on the assumption of two thyroid secretions, a normal one and an abnormal one; the former caused symptoms of hyperthyroidism and the latter the characteristic toxic symptoms. The degree of stimulation, fatigue of the thyroid, the amount of secretion present at different times and unknown factors probably were influenced, he believed, by the amount of iodine present.

Before much was established as to the function of the thyroid gland, the medical treatment employed was more or less empirical, and consisted of long rest in bed, the administration of such drugs as digitalis, belladonna and hydrobromate of quinine, injection of alcohol, carbolic acid, boiling water, electricity, X-ray and many others, hoping to produce a sclerosis of the gland. Even the serum from the blood of thyroidectomized goats was injected into patients suffering with goiter, hoping to relieve them. Later various operations were employed, such as ligating part of its main blood supply, but until the last decade all the methods employed were very unsatisfactory, as the mortality ran very high in all the various form of treatments.

We have to study the functions of this gland to really appreciate why such an abundant amount of research work has been done upon it in trying to reach a satisfactory solution. It has been learned that the thyroid gland has many functions, the most important being perhaps the regulation and control of metabolism or chemical changes that go on in the body, the human body being compared to a furnace, because it consumes fuel and produces heat and energy. The process by which a furnace converts coal into heat and energy is called combustion; just so the process by which the human body converts food into heat and energy is called metabolism.

We know all modern buildings at the present time are equipped with a heating plant that works automatically by a thermostat by which the degree of combustion is regulated and the amount of heat produced is controlled. Similarly, the human body has a delicately adjusted mechanism by which the degree of metabolism is regulated and the amount of heat produced is controlled. Owing to this fact, man has a normal temperature of 98.6° F., and this is maintained in health, with practically little variation, irrespective of the meals and regardless of whether he lives in the tropic or arctic regions. It has been proved that the internal secretion of the thyroid operates this human thermostat. An increase or decrease of thyroid activity is at once shown by a corresponding increase or decrease in metabolism.

It has been found that thyroxin is the active principle of the thyroid secretion, and this contains 60 per cent to 65 per cent iodine. The amount of thyroxin present in the tissues of the average adult is 14 mg. The thyroid gland delivers approximately 0.33 mg. daily to the body, although this amount varies with the metabolic activity. The function of the gland is to maintain 14 mg. of thyroxin in the body or to deliver 0.33 mg. to it daily. Marine and Williams in 1908 stated that iodine caused a reversion in hyperplastic glands to the colloid type after two or three weeks, which bore out the research observation of Halstead, that removal of the thyroid gland in pregnant dogs produced goiters in the pups at birth. If thyroid secretion is excessive, the internal fires burn fiercely and the tissues are stimulated to a course of wasting dissipation. The patient in time develops tremors, sweating, rapid heart action, muscular weakness, loss of weight and feverish mental activity, gastro-intestinal disturbance and many other abnormal conditions. The evidence of excessive secretion suggests the beginning of a tragedy into the life of its object.

If the thyroid secretion is deficient, the metabolism of the body is depressed and heat production and gaseous interchanges are much below normal. The nervous system shows a deficiency in development. The mentality does not rise above the level of that of a small child or infant. So, physically and intellectually, the victim of thyroid deficiency gradually becomes less a human and more a beast. So, from the changes we see developing from an increase or a decrease of the thyroid activity, we conclude that we are dealing with ac-

tion which iodine produces in all forms of goiter.

Naturally we next want to know what are the etiological factors producing the pathology of the gland that causes the different types of goiter.

Concerning the cause of the thyroid changes that lead to Graves' disease we know very little. Clinicians have pointed out that the symptoms of this disease occasionally develop after some unusual excitement or emotion and that practically all patients do badly when exposed to exciting influence. There seems to be no direct evidence that emotional disturbance will precipitate the disease except possibly in predisposed individuals or those who may be already suffering from it in a mild and unrecognized form. It was not unusually frequent during the World War. We know from clinical experience that toxic as well as nontoxic goiters are much more prevalent among females than males, yet I was talking with a prominent diagnostician a few days ago and he said his experience was that goiter has been almost as frequent among his male patients as among females. I do not believe this is the general concensus of opinion. There seems to be no etiologic relationship established between the ovaries and thyroid toxicity. It seems likely that the physiologic changes undergone by the thyroid during the reproductive period of females renders it more unstable and susceptible to stimuli of all kinds and may account for its frequency among females.

Toxic substances have been suspected of having etiologic importance: among these is iodine. Bacterial toxins seem to play an important role in some cases of thyrotoxicosis, such as those which follow infections. It is an established fact that the sympathetic nervous system is markedly involved in this morbid process.

To be able to treat goiters advisedly, we should try to determine in what class they belong. In an article written by Dr. Stuart McGuire a short time ago—from which I have used several of his illustrations,—he classifies them into the following:

1. Colloid goiter.
2. Adenomatous goiter without hyperthyroidism.
3. Adenomatous goiter with hyperthyroidism.
4. Exophthalmic goiter.

1. Colloid goiters are soft and symmetrical in shape, and characterized histologically by an excess of colloid in the acini of the gland. They do not disturb metabolism, so do not cause any constitutional symptoms. This type more often develops about the age of puberty and, as we know, is more common among girls than boys. This type is supposed to be due to lack of iodine.

2. The adenomatous types without hyperthyroidism are spoken of as simple goiters, and usually are unequal in consistency and irregular in outline due to presence of new growths in the substance of the glands. They do not cause any change in metabolism; thus no constitutional symptoms arise. They usually begin in early life and grow slowly, producing deformity and frequently discomfort from pressure. The most of these cases, after about fifteen or sixteen years duration, undergo degenerative changes, then become the third type —adenomatous goiter with hyperthyroidism or toxic goiter.

3. Adenomatous goiters with hyperthyroidism show an increase in metabolism, as there is an increased output of thyroxin. Many of the constitutional disturbances develop, as we see in the exophthalmic type, yet we do not see the remissions in the intensity of symptoms, nor do they develop thyroid crises or have eye changes as seen in the exophthalmic type. Nearly all of these cases develop after forty years of age.

4. The exophthalmic goiters are most common in early life, but are sometimes seen in children and advanced age. The thyroid is moderately but symmetrically enlarged, and the microscopic examination shows evidence of diffuse parenchymatous hypertrophy, hyperplasia, increased vascularity and later increase in the stroma of the gland; also the number of cells lining the acini differ markedly in different glands, and often in the same gland, showing a change in type from cuboidal to columnar, while the colloid material normally present in the acini is less than the normal gland and often may be entirely absent.

From the findings in the different types we know iodine is indicated in the colloid as a prophylactic and cure. Iodine is not indicated, or rather it is contra-indicated, in the adenomatous type, and does not help the toxic type of adenomatous goiter unless it is a mixed

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type, which is rare, but is indicated in the exophthalmic type. It should not be used as a cure, but only in preparing a patient for partial removal of the gland. Surgery is not indicated in the colloid type. Surgery is only indicated in the adenomatous type if there is much deformity, if there are pressure symptoms, or if there are signs of undergoing degenerative changes. Surgery is indicated in the toxic adenomatous type as soon as symptoms due to chronic hyperthyroidism become evident, for they will not yield to medical treatment, and, if allowed to go on, will cause organic changes to develop in the heart, kidneys and other organs.

Surgery is indicated as soon as a diagnosis of exophthalmic goiter is made, for thereby we can prevent suffering, protrusion of eyes, and a bad risk.

These cases should be put at rest, and given Lugol's solution in required amounts until the metabolic rate decreases to a satisfactory point. Then a complete operation can be done safely at one time with almost no fatalities.

### Conclusions

1. I want to thank Dr. McGuire for borrowing from an article written by him last year.

2. If we do more metabolic tests, we will find a great many more patients with thyroid disturbance than we thought.

3. I cannot urge too strongly that caution should be used in giving iodine or thyroid extract promiscuously, certainly not until we have satisfied ourselves with the type of thyroid disturbance with which we are dealing; otherwise, we may entirely lose the best opportunity we will ever have to operate. If we are precautious and prepare the patient before operation, then most goiters *can be removed without great hazard.*

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## THE ROLE OF SEPSIS AS AN ETIOLOGICAL FACTOR IN AGRANULOCYTOSIS.

By HAROLD W. POTTER, M. D., Newport News, Va.

Many writers declare that agranulocytosis is not a clinical entity and some believe that it is an atypical sepsis. This paper is not an attempt to establish sepsis as the causative agent in this disease but merely a review of the reports of fifty-six cases and the tabulation of the history of infection in this series. Those cases in which angina was the first symptom noted have been tabulated as having no history of preceding sepsis. This has been done because angina is often a symptom of the agranulocystosis itself. It is interesting to note that in thirty-six of the fifty-six cases reviewed, a history of preceding infection was obtained. This gives a percentage of about 66 in which there was history of preceding sepsis. These cases might be used to support the theory that agranulocytosis is an atypical sepsis caused by an unrecognized organism having an affinity for the granulocytic mechanism. In addition to the tabulation of history of sepsis the writer has tabulated the age, sex and result of the case. In a brief second table the method of treatment in the cases reported as recovered has been tabulated.

There were thirty-eight females and eighteen males in the series of reports studied. The youngest patient was one and one-half years of age, the oldest was seventy-two. Most cases were in adults in the late thirties. There were seven cases reported as recovered. This gives a percentage of 12.3. Nothing can be deduced from the table of Methods of Treatment used in these cases since three of the seven received only symptomatic treatment and the other four had each a different method of therapy.

Table one tabulates the history of sepsis and table two the types of treatment used in the cases reported as recovered.

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TABLE NUMBER 1

| AUTHOR | HISTORY OF INFECTION | NO. OF CASES | AGE & SEX | RESULTS |
|---|---|---|---|---|
| Bromberg & Murphy[1] | Typhoid Vaccination | 1 | Fe-50 | Died |
| L. W. Batten[2] | No History | 1 | Fe-50 | Died |
| Blumberg & Pease[3] | T. B. & Dental Caries | 1 | M-26 | Died |
| D. Dayton[4] | No History | 1 | Fe-7 | Died |
| H. W. Dasse[5] | No History | 1 | Fe-60 | Died |
| I. S. Haynes[6] | No History | 1 | Fe-42 | Died |
| H. L. Dwyer[7] | Rt. Antrum & Molar Tooth | 1 | M-6 | Died |
| G. S. Kastlin[8] | Cervical Discharge for 2 years | 1 | Fe-24 | Died |
| | No History | 1 | M-38 | Died |
| W. B. Blanton[9] | No History | 1 | M-60 | Recovered |
| R. G. Stillman[10] | Peritonsillar Abscess & Conjunctivitis | 1 | Fe-19 | Died |
| | No History | 1 | M-30 | Died |
| Talley & Griffith[11] | Infected Molar Tooth | 1 | M-56 | Died |
| | Infected Cut on Hand | 1 | Fe-56 | Died |
| | No History | 1 | Fe-68 | Died |
| | Abscess Ext. Aud. Canal | 1 | Fe-60 | Died |
| I. M. Trace[12] | Toxic Rash | 1 | Fe-36 | Died |
| | No History | 1 | M-25 | Died |
| Sharp & Setterstrom[13] | No History | 1 | M-24 | Died |
| Lindsay et al.[14] | Fistula-in-Ano | 1 | M-63 | Recovered |
| H. W. Potter[15] | Infected Foot | 1 | Fe-43 | Died |
| W. M. Bowman[16] | Infected Tonsils | 1 | Fe-31 | Recovered |
| F. C. Hodges[17] | Abscess in Throat | 1 | M-30 | Died |
| | Infected Thumb | 1 | M-52 | Died |
| | Infected Tooth | 1 | M-18 | Died |
| A. L. Tynes[18] | Recurrent Furuncles in Nose | 1 | Fe-51 | Died |
| W. H. Gordon[19] | Otitis Media | 1 | Fe-36 | Died |
| | Otitis Media | 1 | Fe-66 | Died |
| | Sinusitis | 1 | Fe-33 | Recovered |
| | Infected Tonsils | 1 | M-55 | Died |
| J. D. Gray[20] | No History | 1 | Fe-40 | Died |
| | Sinusitis | 1 | M-34 | Died |
| E. R. Lewis[21] | No History | 1 | Fe-35 | Recovered |
| K. L. McAlpine[22] | No History | 1 | M-52 | Died |
| A. W. Jacobsen[23] | Stye | 1 | Fe-1½ | Died |
| | Pneumonia | 1 | Fe-4 | Died |
| J. L. Lattimore[24] | No History | 1 | Fe-65 | Died |
| Rose & Houser[25] | Recurrent Quinsy | 1 | Fe-48 | Died |
| M. J. Keeney[26] | Carcinoma of Rectum & Pyocyaneus Inf. of Throat | 1 | Fe-47 | Died |
| D. Prendergast[27] | No History | 1 | Fe-20 | Died |
| L. K. Gundrum[28] | Gluteal Abscess & Rash | 1 | Fe-58 | Died |
| J. C. Kopelowitz[29] | Dermatitis | 1 | Fe-44 | Died |
| A. B. Jones & B. P. Potter[30] | Sinusitis | 1 | Fe-31 | Living—not recovered |
| C. J. Drueck[31] | Anal Ulcer | 1 | Fe-45 | Died |
| R. L. Fisher[32] | No History | 1 | Fe-24 | Recovered |
| J. Moore & H. Weider[33] | Infected Tooth | 1 | Fe-42 | Died |
| R. C. Whitehead[34] | Pyorrhea and Abscessed Teeth | 1 | M-47 | Died |
| J. Potts[35] | Respiratory Infection | 1 | Fe-24 | Died |
| | No History | 1 | Fe-40 | Died |
| | Peritonsillar Abscess | 1 | Fe-56 | Died |
| H. Hill[36] | Abscessed Teeth | 1 | Fe-46 | Died |
| | Abscessed Teeth | 1 | Fe-* | Died |
| S. R. Roberts & R. R. Kraske | Abscess of Calf of Leg | 1 | Fe-72 | Died—after apparent recovery |

*Age not given.

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TABLE NUMBER 2
TREATMENT USED IN CASES REPORTED AS RECOVERED

| Nucleinic Acid | Leucocyte Extract | Symptomatic | Immuno-Trans. | X-ray |
|---|---|---|---|---|
| 1 | 1 | 3 | 1 | 1 |

The results of these tabulations, while they do not establish any definite conclusions, are suggestive enough to induce some thought as to whether or not sepsis is not at least a factor in the etiology of this baffling malady.

The case reported by B. H. Rutledge, et al.,[37] in which a boy now eighteen years of age has presented the blood picture of agranulocytosis associated with recurrent attacks of furunculosis makes one think even more seriously of sepsis as a factor. This case has been followed for fourteen and one-half years. The first attack was at age two and one-half months.

70 *Thirty-third Street.*

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## A SURVEY OF FOUR THOUSAND CONSECUTIVE WASSERMANN TESTS IN CHILDREN.*

By L. T. ROYSTER, M. D., University, Va.

In 1921 was published,† "A Statistical Report on the Incidence of Congenital Syphilis." The statistics published at that time were on one thousand consecutive Wassermanns in white and colored children. The positive reactions in this series were 12.5 per cent; the colored children showing 15.47 per cent, and the white children 7.04 per cent. These figures were considered, by some observers, high for both races. At that time reports on Wassermanns were made only as positive or negative, and only one test was made on each case. Doubtful reactions were disregarded or considered negative, all others were reported as positive. A careful analysis of clinical evidence in relation to negative or positive reactions was not made.

Here is presented an analysis of four thousand subsequent consecutive Wassermann reactions on white and colored children. The percentage incidence is not computed but more carefully observed facts are recorded for what they are worth.

As in the former report, the observations were made at the King's Daughters Clinic in Norfolk, Va.‡ At that time the Clinic was entirely an out-patient service and consequently few if any infants under two weeks of age were observed; consequently, the observations on those under one month of age were in fact practically during the third and fourth week of life. It is obvious, therefore, that no still births are considered and few if any premature infants. Under these circumstances, it will be observed, few infants born with manifest active or florid syphilis are included.

All of the Wassermann reactions in this series were made by one individual.§ A four

*Read before the Medical Society of the University of Virginia
†American Journal of Syphilis, Vol. 5, page 131.
‡Grateful acknowledgment is made to Miss Mary K. Coxe, R. N., for valuable assistance in the recording and compilation of data.
§Dr. H. G. Parker of the City Health Department of Norfolk, Va.

plus reaction was regarded as evidence of syphilis, even in the absence of clinical signs; but in most instances a second Wassermann test was made when no signs or symptoms were present, and especially when the blood of the mother (usually taken at the same visit) was negative.

Three plus reactions (there is very little difference in significance between three and four plus reactions) were always repeated when no clinical evidence presented, and even when clinical evidence was present, if the mother's blood was negative.

The two plus reactions referred to here were in reality plus or minus, or doubtful, and were always repeated, and were repeated several times in the absence of clinical evidence or negative reaction in the mother's blood.

A test on mother's blood also was routine whenever possible. The results of the observation are presented in table form without discussion.

| | |
|---|---|
| No. White | 2,037 |
| No. Colored | 1,963 |
| Total | 4,000 |

| 4+ | Total | White | Colored |
|---|---|---|---|
| | 213 | 24 | 189 |
| 4+ With Clinical Evidence | 109 | 14 | 95 |
| 4+ Without Clinical Evidence | 104 | 9 | 94 |

An occasional case (3) was negative on repeated Wasserman, even in presence of clinical evidence, and negative mother's blood; and the symptoms did not subside without treatment.

| 3+ | Total | White | Colored |
|---|---|---|---|
| | 42 | 9 | 33 |
| 3+ With Clinical Evidence | 19 | 5 | 14 |
| 3+ Without Clinical Evidence | 23 | 4 | 19 |

Eleven cases in this group with positive blood reactions and manifestly no clinical evidence subsequently were negative without treatment.

| 2+ | Total | White | Colored |
|---|---|---|---|
| | 42 | 19 | 23 |
| 2+ With Clinical Evidence | 22 | 10 | 12 |
| 2+ Without Clinical Evidence | 20 | 9 | 11 |

Three of these without clinical evidence became negative without treatment.

It will be of some interest to analyse those cases of three months old and younger. Out of the 4,000, there were 372 three months old and younger. Of them ninety-four were white, and 278 colored. Fifty-two showed a positive or doubtful Wassermann: Four white, and forty-eight colored. Tables as follows:

Under One Month

| | Total | White | Colored | With Evidence | Without Evidence |
|---|---|---|---|---|---|
| 4+ | 7 | 0 | 7 | 4 | 3 |
| 3+ | 2 | 1 | 1 | 1 | 1 |
| 2+ None | | | | | |

During Second Month

| | | | | | |
|---|---|---|---|---|---|
| 4+ | 26 | 2 | 24 | 14 | 12 |
| 3+ | 2 | 0 | 2 | 1 | 1 |
| 2+ None | | | | | |

During Third Month

| | | | | | |
|---|---|---|---|---|---|
| 4+ | 9 | 0 | 9 | 3 | 6 |
| 3+ | 1 | 0 | 1 | 1 | 0 |
| 2+ | 5 | 1 | 4 | 2 | 3 |

No case under three months positive in any degree, with or without symptoms, became negative without treatment.

## THE TREATMENT OF ECLAMPSIA.*

By A. L. CARSON, Jr., M. D., Fairfax, Va.

During the last two decades the treatment of eclampsia has swung between two extreme views, the radical and the conservative. The last few years have shown even more conclusively the advantages of conservative treatment, particularly in the convulsive types.

In the treatment of eclampsia, as in other diseases, the pendulum has swung from one extreme to the other. In the years gone by the sole and primary aim in every case was to deliver the patient as quickly as possible. It was then thought that the foetus alone was the exciting cause of the symptom-complex called elampsia. Therefore, immediate emptying of the uterus was advocated, and forcible dilatation of the cervix with mechanical dilators was widely practiced. As a result of these methods of accouchement force, the lower genital tract was frequently severely lacerated, with resulting shock, hemorrhage, and very frequent sepsis. This resulted in a high maternal and foetal mortality.

Realizing the inadvisability of accouchement force, but still retaining the old ideas of immediate delivery, the more progressive obstetricians began to use more skilful methods, such as incisions of the cervix, vaginal Caesarian section, and later abdominal section. The results, however, left much to be desired.

In 1909, Stroganoff and his adherents began to endeavor to enforce their ideas, based on very conservative methods, in which little attention was paid to the foetus in utero, but every means was taken to reduce the process of toxin formation in the mother and to overcome its irritating effect by the administration of morphine and other sedative drugs.

The statistics given as to the mortality in eclampsia are very variable and unreliable, and have been quoted in favor of both methods of treatment. The figures usually given are

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from 6 to 45 per cent maternal mortality, and 20 to 60 per cent foetal mortality (DeLee). Stroganoff reports a series of cases up to 1923, with 9.8 per cent maternal mortality. Since then he has reported a series of 230 cases, with 1.7 per cent maternal mortality. No one, even using his treatment exactly, has done so well. His treatment is ultra-conservative, and, as such, advocates the principles upon which most of the present day conservatism is built.

The Stroganoff treatment in detail consists of—

1. Removal of irritation:
   - A. Rest, absolute, in bed.
   - B. Darkened room.
   - C. Separate room and special nurses, with constant observation of mother before delivery and for twenty-four hours post-partum.
   - D. Elimination of all noise.
   - E. No manipulations or examinations except as absolutely necessary, and then usually under chloroform. No baths, no lavage, no enemas or colon irrigations (unless strictly indicated). No packs, no hypodermoclysis or intravenous medications, and no abdominal or vaginal examinations (unless absolutely indicated).
2. Use of narcotics:
   - A. Begin with morphine gr. ¼ hypodermically. One hour later, 20 to 40 grs. chloral hydrate per rectum. Two hours later morphine gr. ¼ hypodermically. Four hours later 30 grs. chloral hydrate per rectum. Six hours later 15 to 30 grs. chloral hydrate per rectum. Seven hours later 20 grs. chloral hydrate per rectum. The dosage may be varied slightly to suit stronger patients and the severer types of convulsive seizures. It is very important that enough be given the first four or five hours to control the convulsions. The patient should sleep, rousing slightly with pains if in active labor. If fourteen hours without a convulsion, lessen the dose of chloral. On the second day and no convulsions, give 20 grs. choral per rectum t. i. d.
   - B. Chloroform—10 to 20 drops at a time, not usually over 10 c.c. in twenty-four hours. It is given for all examinations, for all manipulations of any sort, when a convulsion seems imminent, at the birth of the head, and during the birth of the placenta.
3. Venesection:
   Used in about 10 to 15 per cent of cases since 1911. Indicated if convulsions recur two or three times, if a very severe one occurs, or if they continue in spite of the narcotics. Also indicated in pulmonary edema, or a very hard pulse post-partum.
4. Delivery:
   This is accomplished as soon as possible without danger to mother or child, especially the mother. Methods devoid of much manipulation are used; rupture of membranes, a careful forceps, etc., may be used when conditions are suitable. The following procedures are not done, —accouchement force, bags, or Caesarean section.
5. Maintenance of body functions:
   - A. Lungs.—Give plenty of fresh air. Oxygen is valuable used during and after a convulsion. The position of the patient should be changed at least every four hours. Mouth and nostrils should be kept cleansed and free from mucus and vomitus.
   - B. Skin and kidneys.—Warm light coverings are used with hot water bottles to feet. Hot weak tea and milk, of each 500 c.c., are given every twenty-four hours by rectum or by mouth.
   - C. Heart.—Digitalis is used if the pulse is very weak or rapid (over 110). Caffein and other stimulants are used only as strictly indicated.

The Stroganoff, or ultra-conservative treatment, which I have just outlined somewhat in detail, has many advocates. Many who have practiced and praised the rapid methods of delivery are now following the Stroganoff method. Those who have given this method a fair trial usually admit that it has lowered their mortality considerably as compared to the old radical procedures, but no one seems to be able to approach Stroganoff's low figures,

even though they have used his method in great detail. As a result, there are now many modifications of this method being used. The tendency in America is to be conservative, to individualize each case, and to try to treat the patient as well as the disease.

Despite Stroganoff's results, it is generally believed that chloroform should not be used in an eclamptic. The use of chloroform should certainly increase the degeneration and areas of necrosis always found in the liver of an eclamptic. Williams, of Baltimore, in his modified Stroganoff treatment, uses ether instead of the more toxic chloroform. DeLee, of Chicago, recommends ether or ethylene. Because of acidosis, only a small amount of any anaesthetic should be given to an eclamptic.

Glucose.—Titus, of Pittsburg, has done a great deal of work in the past five years on the carbohydrate metabolism in pregnancy. The "glycogen deficiency theory" of the origin of eclampsia is that lack of sufficient carbohydrate intake in the maternal diet plus unusual demands of foetal and placental growth cause a glycogen deficiency which is noted especially in the liver. Acting on this theory, intravenous glucose should be specific treatment. It is not specific, but it does a great deal of good in that it serves to combat acidosis, tends to repair liver damage, and thus to restore liver function and to promote diuresis. Titus and Lightbody, in 1929, made an effort to determine the average actual therapeutic dose, because over-dosage and under-dosage have been a common occurrence. They found that the most beneficial results seemed to follow the intravenous administration to an average adult of 75 grams of glucose in a volume of 300 c.c. (25 per cent sol.). The solution must be given very slowly—ninety minutes for each injection. Lesser concentrations of the solution may be given as necessary to suit the individual case, but these investigators have very definitely proven that 75 grams in 300 c.c. represents a safe and average adequate dose. The medication may be given and repeated from one to three times daily, as necessary. A specimen for blood sugar reading should be taken just before each intravenous injection of the glucose so we may have a guide to further treatment. Usually the blood sugar readings will remain low in eclampsia even after 100 or 150 grams of glucose have been given by vein. In connection with the use of glucose, it is well to remember that eclampsia is comparatively rare in the tropics where the diet is chiefly carbohydrate, and that during the World War the incidence of eclampsia among the German women was much diminished—due, it was thought, to lack of meat and a corresponding increase in the consumption of carbohydrate foods.

Schwartz and Dieckmann, in their "Important Procedures in the Conservative Treatment of Eclampsia," state that they use 1,000 c.c. of 20 per cent glucose intravenously two, three, or even four times daily, depending on the severity of the case. They also inject 5 per cent Karo syrup water into the stomach as soon as it will empty itself. They begin with 50 c.c. Karo solution, and increase hourly up to the patient's tolerance, which may be up to 300 c.c. per hour. This is continued until the patient is conscious and able to take fruit and fruit juices.

The Lazard treatment consists of the intravenous administration of magnesium sulphate. Lazard, of Los Angeles, reported his work on the use of magnesium sulphate in eclampsia in 1925. The magnesium sulphate is used to control the convulsions by its sedative and anti-convulsive effect, and by its eliminative action. The eliminative effect is due to the dehydrating action of magnesium sulphate intravenously. Its use causes tissue fluids to be drawn into the blood stream, thus reducing the edema. The tissue fluids which are drawn into the blood stream increase the aqueous content of the blood; diuresis is increased and the acute kidney block is overcome, thus tending to relieve the toxemia. Cerebral edema is reduced, the intracranial tension is thus relieved, and the coma usually begins to clear up rapidly. Lazard first used additional eliminative measures, such as hot packs, lavage, etc., in conjunction with intravenous magnesium sulphate, but soon found that the addition of these other eliminative measures made the convulsions harder to control. The essential features of the Lazard treatment are—in eclampsia with the patient in convulsions, give 20 c.c. of 10 per cent magnesium sulphate intravenously as soon after the first convulsion as possible. Repeat every hour until convulsions are controlled, but do not exceed a maximum of six doses. Blood pressure is to be taken every hour after the convulsions are controlled,

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and if the blood pressure begins to rise, repeat the magnesium sulphate; also repeat should the convulsions recur. If the patient is comatose, or semi-comatose and very restless, and the blood pressure is falling, chloral hydrate and sodium bromide are given per rectum. Utmost quiet, no manipulations or examinations, and oxygen inhalations after each convulsion, are recommended. Lazard says that surgical interference in an eclamptic should be limited to assisting labor in the second stage only on definite obstetric indications.

For the five years previous to the intravenous magnesium sulphate therapy, Lazard's maternal mortality was 36 per cent. Since using magnesium sulphate he has reported a series of 142 cases with a maternal mortality of 9 per cent.

In addition to its use in frank eclampsia, magnesium sulphate intravenously has been used with much success in the prevention of convulsions—in the so-called pre-elamptic state. In pre-eclampsia, with a blood pressure of 150 or over that does not readily and quickly reduce after the usual sedative and eliminative treatment and dietary regulation, 20 c.c. of 10 per cent magnesium sulphate is given intravenously. The blood pressure is taken twice daily, and the intravenous medication is repeated if the blood pressure still remains high. This treatment usually works very nicely and it is believed that its use has prevented many cases of pre-eclamptic toxemia from developing into true eclampsia.

Magnesium salts have a direct inhibitory action on cardiac muscle in vitro, but, used intelligently intravenously in eclampsia and in the dosage and concentration described, there are no apparent ill effects. Occasionally there is a slight reaction which rapidly wears off. The pre-eclamptics nearly all complain of a sensation of warmth when the injection is given, and occasionally there is nausea and vomiting, but this rapidly clears up. In Lazard's preliminary report in 1926, he states that in over 1,000 injections he saw no accidents or severe reaction. One of the important points in using magnesium sulphate intravenously is that it must be given very slowly, and one should take at least ten minutes to give one injection of 20 c.c. It is rarely necessary to give as many as six injections, which Lazard considers the maximum. The cases I have seen nearly all responded to one or two injections of the magnesium sulphate solution, provided intravenous glucose was also used in the general treatment. Some have hesitated in using magnesium sulphate intravenously on account of the theoretical danger of cardiac or respiratory embarrassment. While I do not deny that this has occurred in a very few instances, it is only a very occasional and rare happening. Ten c.c. of 25 per cent calcium chloride given intravenously will entirely balance the magnesium effect if it should be necessary.

Lazard says that intravenous magnesium sulphate as given to an eclamptic will neither hasten nor retard labor. My own observations have been that if the patient is not in labor but is approaching labor with the uterus irritable, then it does seem to hasten the onset of labor after the patient has become quiet and relaxed and the blood pressure has come down. This is a desirable feature.

After an eclamptic patient has been treated medically and has improved, measures may then be instituted to cause the delivery of the patient if delivery is desirable and she does not go into labor spontaneously. Of course, the patient should be watched carefully to prevent a recurrence of her former symptoms, and the induction of labor should be the simplest method applicable to the particular case. Whether labor is induced by the simple rupture of membranes or delivery is accomplished by Caesarean section, it is important that the method chosen should be as devoid as possible of shock.

Occasionally conservative medical treatment fails. What must be done with these exceptional cases? If the treatment has been a combination of sedatives, magnesium sulphate, and glucose, and they have been used from eight to twelve hours and we find that diuresis is not satisfactory, that coma is not clearing or is developing, and the temperature and pulse are increasing, then it is evident that delivery must be accomplished at once. The method chosen will depend on the obstetric features of the case and the skill of the operator. Additional shock must be prevented as far as possible.

When the cause of a disease is not known, the treatment is often problematical. We do not know the real cause of eclampsia, and it may be some time before we do. Until the cause is discovered, we cannot expect too much progress in treatment. The mortality from

eclampsia is high. Eclamptics are poor surgical risks. Operative measures should rarely be instituted until medical treatment has placed the patient in as good a condition as possible. Each case must be individualized. The most conservative treatment is best. The most satisfactory treatment appears to be a combination of sedatives, glucose and magnesium sulphate.

I have tried to stress the advantages and principles of the conservative treatment of eclampsia. I cannot leave this subject, however, without saying a few words about the prevention of this disease. Eclampsia is largely a disease of neglect. The obstetrician of today watches and cares for his patient throughout her pregnancy. Prevention and the early recognition of a beginning toxemia will avert the great majority of cases of frank eclampsia. Every expectant mother should be taken seriously. If we are to prevent eclampsia, it is absolutely necessary that we supervise the expectant mother and care for her from early in pregnancy. Prenatal care has accomplished so much in the reduction of maternal mortality from eclampsia that it is more than worthwhile for this one reason alone. The physician who has his patients best interests at heart will do all he can to see that every expectant mother is given the care and supervision she deserves throughout her pregnancy. Prevention is far easier and much more valuable than cure. If each pregnant woman is given adequate and intelligent prenatal care, the problem of the treatment of eclampsia will be greatly lessened. Prenatal care is of the utmost importance in the prevention of eclampsia.

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## HYPERTROPHY OF THYMUS GLAND IN INFANTS—CASE REPORTS.*

By LEO E. HAYES, M. D.,
and
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The thymus gland is supposed to be essentially a gland of infancy and childhood.

The incidence of thymic enlargement was supposed to be rare, but with the improved technic of the X-ray and constant watchfulness on the part of the general practitioner, the pediatrician and the surgeon, there is a constant increase in the number of cases reported and a great number of deaths explained in infants, otherwise explained and recorded as deaths due to congenital atelectasis or congenital heart disease.

### Anatomy and Physiology

The anatomy of the thymus gland is one of marked variation. It varies in weight, shape and thickness. After birth its surfaces are molded by the organs and structures which surround it, namely, the heart, lungs, trachea and great vessels.

The concensus of opinion is that the gland enlarges up to the first or second year of life, but Hamner's researches have shown that involution as a rule does not take place until after puberty, and even then areas of functioning parenchyma last until old age, though involution may occur at any age.

Bandler, in medical gynecology, contends that the thymus gland should be classed with the internal secretory glands of epithelial type. According to him, the thymus grows up to the time of puberty and then becomes smaller. This would point to a connection between the thymus and the genitalia. Either the thymus prevents the too early development of the gonads, fulfills a function taken over later by the gonads, or else the development of the

*Read before the Alleghany-Bath County Medical Society, at Covington, Va., January 22, 1931.

gonads and their secretion antagonizes the thymus.

Even though showing some retrogression after puberty, the gland functions throughout life, as acute infections result in an increase in lymphoid cells and in the number of Hassall corpuscles.

Status lymphaticus, or sudden death, often associated with enlarged thymus and hyperplasia of the other lymphatic glands, was attributed to thymic asthma, but autopsy shows no narrowing or closure of the trachea. It is due to primary heart failure, and in these individuals there is not an infrequent combination of thymic enlargement and Basedow's disease.

### Diseases of the Thymus

There are several diseases of the thymus gland: congenital absence, tumors, and syphilis, but the one most important and frequently found is enlargement, the others being more or less rare and found at autopsy.

### Enlargements

Enlargement is not as uncommon as one would think, as statistics show in the infant. Some of these enlargements are symptom free, others not. Roentgenograms on a series of supposedly normal children by various observers have shown a large percentage of cases with distinct enlargement of the gland.

Blackfan and Little found twenty-nine out of a total of sixty; Liss, fifty out of one hundred and nineteen; and Peterson and Miller, fifty-two out of one hundred and twenty. The percentage of positive runs about the same, varying with different investigators from about 44 per cent to 50 per cent.

There is no doubt that an enlargement of the thymus exists in a large number of new-born infants and, as it is a potential cause of sudden death, all suspected cases of enlargement, namely, in premature infants, in twins, in cases of asphyxia at birth, in infants who do not develop normally during the first month of life, in those who fail to cry lustily at birth, and in those infants who seem to be drowsy and sleepy and who take the breast poorly, should be X-rayed to determine the presence or absence of an enlarged thymus.

### Symptoms

Symptoms that have been described by Lange and which are quoted in a recent paper by Pfahler as pointing to an enlargement are as follows: "Inability to cry loudly, crowing respiration when crying, noisy respiration when asleep, difficulty in nursing, twitching, fretfulness and other nervous symptoms, vomiting or regurgitation, feeble respiration, grunting, slow or retarded development, failure of the child to gain in weight in spite of all proper dietary measures, inanition, obesity, cough and hiccough."

### Differential Diagnosis

Enlargement of the thymus may exist, and very frequently does, which will give rise to abnormalities of respiration and other symptoms of enlargement. Any of the following conditions may closely simulate an enlarged thymus: cerebral birth injury, congenital heart lesion, congenital laryngeal stridor, catarrhal laryngitis, laryngeal diphtheria, bronchial asthma, etc. The age of the patient, time of occurrence, physical findings and course pursued will enable one to arrive at a correct diagnosis. The therapeutic test of Pfahler—that any form of obstruction that does not yield promptly to X-ray is not due to an enlarged thymus—is an important aid in diagnosis.

### Treatment

Operative interference was the only method of treatment until quite recently. In 1896, Rehn and Konig performed the first operation by merely elevating the thymus, thereby relieving the pressure on the trachea. Later, partial thymectomy was performed. However, the mortality was very high. Later, Heinecke's experiments in the shrinkage of lymphoid tissue by means of X-ray recommended itself to Friedlander, who treated a two months' old baby with good results and no mishaps. This baby had been troubled with bronchial asthma.

Shrinkage of the lymphoid tissue by fibrosis from X-ray exposure can be controlled by the frequency and duration of treatment. The simplicity and freedom from danger by X-ray, and as a rule a favorable outcome, has completely displaced surgical intervention and reduced the mortality rate. If symptoms demand urgent treatment, daily exposures may be given; if not, intervals of four or five days between treatments are preferred.

The results of Blackfan and Little, who, in two hundred cases of thymic asthma, succeeded in curing all but six by one series of treatments, is the usual experience, and Pfahler looks upon

the X-ray as a specific treatment for the disease.

Some clinics advise routine X-rays of all new-born infants; others only those suspected of having enlargements; others only of those showing symptoms, but all seem to be agreed on the one fact that all children showing enlargement should receive X-ray treatment, regardless of symptoms being present.

The following two cases are reported from practice during the past year:

*Case* 1.—Baby B., born August 15, 1930, 11 P. M. Normal birth. Mother had no difficulty in labor nor was it prolonged, baby being born in right occipital anterior position. Mother was para—two. Baby weighed eight pounds and two ounces. No abnormalities were noted except that the baby failed to cry very lustily after birth. Baby did not take the breast very good for two or three days, according to mother, as it had to be aroused in order to nurse. August 19th, physician was called to see Baby B., the mother stating that the baby had difficulty in obtaining its breath and it had turned blue. Upon arrival and examination, no physical findings or symptoms were found, the baby having completely recovered from his attack of cyanosis and difficulty in breathing. Six hours later the call was repeated and the same condition was said to have been present. Upon arrival the baby was found dead, having died very suddenly with an attack of cyanosis and difficult breathing. Diagnosis was made of an enlarged thymus, but autopsy was not obtained.

*Case* 2.—Baby C., born October 25, 1930. Normal birth. Duration of labor three hours. Baby weighed five pounds. No abnormalities noted. Baby's cry was feeble at birth. Failed to gain in weight, took breast poorly and was very drowsy. Several times during the first ten days the mother complained of baby having hiccoughs. On December 9, 1930, mother complained of baby having paroxysm of cyanosis. These paroxysms increased in frequency and severity through December 9th and 10th, until baby became dehydrated through failure to nurse on account of the frequency of the paroxysm of cyanosis and interference with respiration. There was a respiratory stridor present, due to pressure, and a large accumulation of mucus in the chest. Baby was X-rayed December 11, 1930, and showed an enlarged thymus gland, which extended to about the middle of both clavicles laterally, and overlying the right auricle. X-ray exposure of three minutes anterior and three minutes posterior was given. The clinical picture, as described above, persisted for forty-eight hours after exposure, when the symptoms began gradually to subside. Administration of oxygen and artificial respiration were necessary during this period to keep the baby alive.

An occasional paroxysm of cyanosis occurred during the next several days, when the baby was subjected to another X-ray exposure. Following this second treatment, the paroxysms of cyanosis completely disappeared, nursing improved, and the baby began to gain. Some interference with respiration still persisted. On January 7, 1931, another X-ray plate was taken, which showed a marked reduction in the size of the thymus gland, and another exposure of one and a half minutes anterior and posterior was given. At the present time the baby is practically symptom free.

The mother gives a history of the loss of a baby three years ago, at the age of one month and two days, with a clinical picture similar to this one. There are two older children in the family who have the silky hair and transparent sclerae characteristic of the status lymphaticus type.

## Conclusions

1. An enlarged thymus produces both pressure and toxic symptoms.
2. Every child that gives the slightest indication of thymic enlargement should have an early X-ray examination.
3. X-ray is by all means the best method of treatment.
4. X-ray is harmless with the proper administration.
5. Regeneration of the thymus gland is frequent, and the patient should have a re-examination at varied intervals.
6. All suspicious cases should have the benefit of X-ray therapy, even when positive X-ray findings are absent.
7. Thymic enlargement is attended with great danger and many cases of sudden death in infants have been directly attributed to it, as demonstrated by autopsy findings.

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# Analyses, Selections, Etc.

**Spinal Anesthesia in General Surgery.**

G. Paul LaRoque, M. D., of the Department of Surgery, Medical College of Virginia, Richmond, says that in the past eighteen months he has employed spinal anesthesia in approximately two thousand cases and the results have been entirely satisfactory. At first they used this method only for operations upon handicapped patients suffering from such diseases as diabetes, kidney breakdown, and general systemic conditions, characterized by greatly impaired vitality. However, having proved its value in operations upon the lower extremities, bladder and prostate, rectum, and groin, they then used it with equal success for operations in the lower abdomen, and next learned that it was adequate for operations upon stomach, gall-bladder and kidney. Repeated tests proved that the anesthesia in many cases extended well above the clavicle, so finally this method was used in operations upon the chest wall, including operations for radical removal of cancer of the breast.

They used spinal anesthesia successfully in many cases of diffuse peritonitis, complete intestinal obstruction, perforating ulcers of the stomach and bowel, appendicitis, ruptured tubal pregnancy, rupture of the uterus, one case of abdominal pregnancy, full term, simple and complicated hernia, bladder, tumors, fractures and dislocations of the lower extremities. The patients varied in age from six years to seventy-nine. They have not employed the method in operating on babies.

The advantage of operating under the relaxation of spinal anesthesia with the lessened need for intra-abdominal packs and handling to keep the bowel out of the way, is obvious. Even in operations requiring more than one hour for performance, as will occasionally be the case for ulcer or cancer of the stomach, difficult gall-bladder operations, splenectomy or nephrectomy, it is easy to supplement the spinal anesthesia, which seldom lasts longer than an hour and a quarter, with gas-and-ether narcosis.

There will be found occasionally a patient with deformity of the spine in which it is difficult or impossible to insert the needle at the proper location for lumbar puncture. They have routinely made the puncture and injection with the patient lying on the side with knees drawn up and shoulders down. In a few cases they found it difficult to make the puncture and have had the patient sit up and bend forward to increase the space between the bones. Ephedrine has been used hypodermically with morphine given a half-hour before the patient is carried to the operating room, though this has been omitted in some cases with extra high blood pressure, either before or during operation. Throughout the operation the head of the patient is kept low. Following operation, the foot of the bed is kept elevated for from one to four hours.

It is considered essential to have a trained anesthetist watch with scrupulous care every patient's general condition and blood pressure, though there have rarely appeared signs of danger.

The author states that they often carry on a conversation with the patient while operating, and many intelligent persons are quite interested in discussing the technical procedure. Doctors, medical students, and nurses have naturally been particularly satisfactory subjects. Reasonable speed and dexterity are necessary, and the self-assurance and poise of the surgeon inspires the patient's confidence.

Vomiting may be stopped by the application of cold cloths to the face and neck, and by instructing the patient to breathe deeply through the mouth.

Anesthetization could not be secured in a few patients in spite of giving what was thought the proper injection of the drug.

There have been a number of cases in whom the blood pressure was very low, and some desperately sick with intestinal obstruction, peritonitis and other terrible diseases requiring dangerous operations, in whom toward the end of the operation the blood pressure could not be recorded. In these cases ephedrine was given, occasionally adrenaline, and in all cases in which there was shock before starting, or in which a difficult or prolonged opera-

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tion was anticipated intravenous injection of salt solution was given. Inhalations of $CO_2$ are beneficial in raising a low pressure.

No patient has died from the anesthesia either on the table or after the operation during the time that the drug could have had any effect. They lost one patient on the table toward the end of the operation for ruptured uterus with massive intra-abdominal hemorrhage, though they cannot say that the spinal anesthesia had anything to do with the death. In a patient with rupture of the uterus and massive hemorrhage following unsuccessful attempt at delivery of full term pregnancy, they could not reasonably ascribe the death to the anesthesia employed whatever it may have been.

There have been few post-operative complications. There has been such a diminution in respiratory complications that cough or pneumonia are no longer anticipated, but there have been at least half a dozen recognizable cases of pulmonary atelectasis. There are nothing like as many cases of vomiting and headache as are expected as a part of etherization.

Concerning the much dreaded motor-sensory paralysis, these are a myth. Organic spinal cord paralysis cannot be produced by the proper method of making a puncture between the second and third, or third and fourth lumbar vertebrae. Hundreds of cases have been examined for loss of motion and sensation in this group of two thousand, but no disturbance of normal has been seen after the anesthesia has worn off. Nowadays they never mention the subject or examine them afterwards, for fear the suggestion might result in hysteria.

SUMMARY: The author believes spinal anesthesia should be used upon all patients needing operation who are old enough to cooperate while the needle is being introduced for lumbar puncture. The contraindications are only in those patients in whom the puncture is impossible or unwise, i. e., because of ankylosis of the spine in this location, or in cases in which there is infection of the soft parts of the back exactly at the point for needle puncture. It has been given to some patients as many as five times, usually after several days interval, though in a few cases it was given a second time within forty-eight hours.

He considers spinal anesthesia one of the greatest advances made in the progress of surgery since the introduction of ether. It has an extremely wide field of usefulness. It has been employed with the utmost satisfaction in operations in all parts of the body below the clavicle.

It should be employed in preference to ether, and is a life-saving method in people handicapped or in some way unsuited to the administration of ether.

It is safer than large quantities of novocaine administered by local infiltration and nerve block. (*Southern Medicine and Surgery*, April, 1931.)

# Woman's Auxiliary, to the Medical Society of Va.

PRESIDENT—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
PRESIDENT-ELECT—*Mrs. M. N. King*, 1314 Westover Avenue, Norfolk.
SECRETARY—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
TREASURER—*Mrs. Wm. Branch Porter*, 5125 Cary Street Road, Richmond.

## Our Annual Meeting.

TO THE MEMBERS:

The annual meeting of the Medical Society of Virginia will be held in Roanoke, October 6th-8th. The Women's Auxiliary is always held in conjunction with this meeting, and we are hoping for a large attendance. A gathering of this kind has great possibilities and is always inspiring. It affords the opportunity for the exchange of ideas; it gives one a new and broader vision of the work, and we also have the pleasure of meeting old friends and making new ones.

The first real meeting of the Auxiliary, after its organization in Norfolk, in 1922, was held in Roanoke in the Fall of 1923. All who were fortunate enough to be present then will remember what an interesting occasion it was and the many delightful social affairs; so we are looking forward with joy to returning to Roanoke this Autumn.

Mrs. John O. Boyd, Roanoke, Va., the local chairman, is giving cordial co-operation to the officers in planning the program, and hopes to make this a most interesting and helpful meeting.

There will be two business sessions: The first on Wednesday morning, the 7th, when the reports of the officers and chairmen will

be given, and also an address by one of our guests of honor, Mrs. Walter McNab Miller, from the American Child Health Association, of New York.

Thursday morning there will be a talk by Virginia's New Health Commissioner, Dr. Warren F. Draper, followed by several "Round-Table" discussions of plans for the work of the Auxiliary for the coming year. We hope every one will take part in this informal Forum, and we will welcome suggestions.

Come to Roanoke on October 6th, and stay through the 8th, and make this the biggest and best Convention in the history of the Auxiliary.

Sincerely,

MARY GRAY HODGES,
(MRS. J. ALLISON HODGES),
*President, Women's Auxiliary to Medical Society of Virginia.*

**Panoramic View of the Women's Auxiliary to the A. M. A.**

EXCERPTS FROM REPORT BY MRS. WAYNE BABCOCK ON THE EASTERN DISTRICT

According to the Constitution of the National Auxiliary, the first Vice-President is automatically Chairman of the organization, the three other Vice-Presidents being organizers for their section of the country. Mrs. Southgate Leigh, of Virginia, therefore, holds this Chairmanship, and the Eastern District is her particular responsibility. At her request a series of four articles is being prepared by her Committee, in order that each District may be cognizant of the progress of its own State, as well as that of the other three sections. The individual State journals have been generous in the extreme in the space they have allowed their Auxiliaries, and this additional courtesy of reporting the Auxiliary situation in other States is deeply appreciated, for there is a growing desire to know "what others are doing."

New Hampshire stands alone as the only New England State 100 per cent organized and cooperating with the National Organization. Last year the State Auxiliary had misgivings as to its necessity and usefulness, but an urgent request from the Medical Society that the women remain organized, dispelled all doubts. During the year following, Mrs. Hubbard, wife of the State President, visited every county, which encouraged and stimulated the growth of the unit auxiliaries.

The New Jersey Auxiliary made pilgrimages to State institutions, set apart one meeting when the mothers of physicians were entertained, and sponsored various health meetings. The Essex County Auxiliary, assisted by the physicians, succeeded in establishing a course of health talks, in cooperation with the Y. M. C. A. of Newark, emphasizing especially prenatal care and information which would aid the mothers of babies and young children. Last year Mrs. James Hunter, Jr., New Jersey's State President, visited every county, as did Mrs. Walter Jackson Freeman in Pennsylvania, during her Presidency. One cannot help drawing the conclusion that personal contacts are necessary for county development and success.

Virginia is active in spots. The doctors encourage the Auxiliaries, as they believe that through them education with regard to the menace of State medicine can be spread.

The two subjects upon which the Auxiliary is concentrating its efforts are:

1. Annual Examinations of children before entering school, by their family physicians and taking the treatment they prescribe. This we hope will also make more popular the annual physical examinations of adults.

2. Using our influence to have prospective mothers attend the Prenatal and Postnatal Clinics, which our doctors are establishing in various sections of the State. Education along these lines will greatly reduce the mortality in mothers and children. We believe this is the most needed and the most important work we can do for Virginia.

Ohio for several years has been sending representatives from a few organized counties to the National meetings, but as yet there is no State Organization. As our friend and advisor, Dr. Upham, lives in Ohio, it is felt that he will advise the National Auxiliary when the auspicious time arrives for the establishment of a State Auxiliary.

The District of Columbia seems so completely diverted with Washington affairs that the Auxiliary which so capably cared for the A. M. A. meetings some years back seems to have gone into retirement.

Delaware, in a breathless, better-late-than-never manner, has completely caught up, is most interested and active, and has entered

upon serious work by assisting the men of the profession in establishing a medical library in Wilmington. They will cooperate with Philadelphia at the time of A. M. A. and the eastern section will introduce them with pride to the National Organization.

West Virginia is up and doing, and you may expect still better things from the State this year.

Maine, Massachusetts, Rhode Island, Vermont and Maryland have reported the interest of individuals, but no organized effort. Queries from different localities in New York as to why there is no Auxiliary have been answered with the statement that several years ago the House of Delegates voted unanimously in favor of the Auxiliary and authorized its organization. The same year Connecticut voted favorably, but no definite steps have yet been taken, and so, we shall still hope!

Pennsylvania has surely discovered the rhythm in which its Auxiliary work is best done, for concrete accomplishments have been turned out regularly, year by year. Of the three thousand dollars contributed last year to the Medical Benevolence Fund, more than two-thirds was contributed by the Auxiliary. A definite trend toward educational meetings is felt all over the State and socially it is hoped that the carefully formed Philadelphia plans for the next meeting will bring honor and glory to the Keystone State. Not only are the adult members of the Auxiliary meeting, but a group of the most charming and good-looking daughters of doctors are working together in order that they may know each other and work in unison for the comfort and pleasure of the A. M. A. guests when they come to Philadelphia in May. Verily, who can question the wisdom of the Auxiliary, when it brings about so much willing work in behalf of the medical men of the country?

# The Truth About Medicine

In addition to the articles enumerated in our letter of May 29th the following have been accepted:

Carel Laboratories.
- Alpha-Naphco Camphor Nasal Unguent.
- Alpha-Naphco Cones.
- Alpha-Naphco Menthol Suppositories.
- Alpha-Naphco Rectal Suppositories.
- Alpha-Naphco Zinc Stearate Camphor Ointment.
- Alpha-Naphco Zinc Stearate Powder.
- Alpha-Naphthol Camphor Oil.

Lederle Laboratories, Inc.
- Liver Extract—Lederle.

## NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Syrup No. 112 Ephedrine Hydrochloride.—It contains ephedrine hydrochloride—Lilly (New and Nonofficial Remedies, 1931, p. 175) 0.22 Gm., in 100 c.c. (1 grain per fluidounce) and alcohol, 12 per cent. Eli Lilly & Co., Indianapolis, Ind.

Quiniobine.—Quinine bismuth iodide rendered soluble in olive oil by means of lecithin. Each c.c. contains 0.03 Gm. of bismuth, 0.03 Gm. of quinine, 0.075 Gm. of iodine, and 0.22 Gm. of lecithin. Quiniobine is proposed as a means of obtaining the systemic effects of b smuth in the treatment of syphilis (New and Nonofficial Remedies, 1931, p. 94). It is claimed that, since in Quiniobine the quinine bismuth iodide is soluble, the injections are usually only slightly painful and the dosage is more accurate than with suspensions of quinine bismuth iodide. It is supplied also in the form of 2 c.c. ampules. Spicer & Co., Glendale, Calif. (Jour. A. M. A., June 6, 1931, p. 1953.)

Calcium Gluconate.—It contains calcium equivalent to not less than 12.4 nor more than 12.8 per cent of calcium oxide. Calcium gluconate is used to obtain the therapeutic effects of calcium. It is more palatable than calcium chloride for oral administration and for hypodermic or intramuscular use is nonirritant.

Calcium Gluconate-Pfizer.—A brand of calcium gluconate—N. N. R. Chas. Pfizer & Co., Inc., Brooklyn, N. Y.

Concentrated Pollen Antigens—Lederle.—Liquids obtained by extracting the protein from the pollen of plants with a liquid consisting of 67 per cent of glycerin and 33 per cent of a buffered saline solution. For a discussion of the actions and uses, see Allergic Protein Preparations, New and Nonofficial Remedies, 1931, p. 23. Concentrated pollen antigens —Lederle are marketed in packages of fifteen syringes containing increasing dosages; also in supplementary treatment packages of five syringes. The following product has been accepted: Concentrated Pollen Antigen (Lederle) Ragweed Combined (Common and Giant Ragweed in equal parts). Lederle Laboratories, Inc., Pearl River, N. Y. (Jour. A. M. A., June 13, 1931, p. 2036.)

## FOODS

The following products have been accepted by the Committee on Foods of the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in Accepted Foods:

SMACO (206) Powdered Whole Milk (S. M. A. Corporation, Cleveland). A powdered spray-dried whole milk hermetically sealed in tins in an atmosphere of nitrogen. It is claimed by the manufacturer that each 12 ounce can will make 2.8 quarts of liquid milk of normal strength.

SMACO (208) Powdered Skim Milk (S. M. A. Corporation, Cleveland). An almost fat free skim-milk powder hermetically sealed in cans in an atmosphere of nitrogen. This product is intended especially for infant feeding, each 8 ounce can being claimed to be equivalent to 2¼ quarts of normal strength liquid skim milk.

Mead's Powdered Lactic Acid Milk Noncurdling No. 2 Plain (Mead Johnson & Co., Evansville, Ind.). A powdered, spray-dried homogenized milk containing added lactic acid. It is claimed that the powder may be readily mixed with cool or hot water to form a fine suspension. The mixture may be boiled with-

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cut curdling or change of color or taste. It is recommended for infant feeding.

### PROPAGANDA FOR REFORM

Use of Salinized Water in Industry.—At the present time salines are regarded as preferable to dextrose in the prevention and treatment of factory cramps due to excessive loss of fluid and salines through sweating. Both prevention and treatment of cramps are well abetted by the intake of dilute saline solutions to compensate for loss through sweating. It is, however, undesirable that tablets of salts be taken into the body as such. It is better that the entire water supply be treated with salt to the extent of 1 per cent. A strength from 0.3 to 0.5 per cent, being more palatable, may lead to more extensive use, especially if kept at a temperature from 47 to 52 F. (Jour. A. M. A., June 13, 1931, p. 2055.)

Zinc Chloride in Cancer—The use of zinc chloride and similar caustics in the treatment of cancer has been practically abandoned by all except the "cancer cure" quacks. Such caustics are difficult of control, so that there is destruction of healthy, as well as of malignant, tissue; their action is slow, thus unnecessarily prolonging the pain of removal. Much better results can be obtained by the judicious use of surgery when the growth is operable, or by the use of radium and roentgen rays when the disease has advanced beyond the chance of its complete removal. The use of such caustics has been abandoned also by the progressive dermatologists in the treatment of small epitheliomas of low malignancy; they use, instead, radium, roentgen rays, or coagulation with high frequency currents. (Jour. A. M. A., March 7, 1931, p. 797).

The Control of Narcotic Addiction.—Narcotic addiction is again the focus of an extraordinary amount of attention. The results of investigations concerning the subject are being made public. The taking of narcotics is usually an attempt on the part of some one with little will power to achieve a state of euphoria or artificial happiness. The addict finds withdrawal accompanied by exceedingly unpleasant symptoms and tends to succumb again. Apparently it is possible for an experienced physician to carry an addict through the witdrawal period with relatively little distress. The importance of narcotic preparations should not be under-estimated. Nevertheless, there exist in medicine innumerable occasions when one or more of the relatively non-habit-forming sedatives, narcotics, hypnotics and analgesics may be employed to substitute for an opium derivative. A series of articles is to be published in an effort to indicate the relatively few instances demanding the administration of opium or cocaine derivatives and the many available substitutes. It is estimated that under 25 per cent of nartotic addiction results from prescriptions by physicians in cases in which such prescribing may not have been absolutely necessary. The physician must try to limit his prescribing of narcotics absolutely to those situations where they are indispensable. The medical use of narcotics in the United States appears to surpass that of any other nation. Efforts are being made to limit the prescribing of narcotics to those instances where their use is indispensable. (Jour. A. M. A., March 14, 1931, p. 862).

Research for a Non-Habit-Forming Substitute for Morphine.—The Committee on Drug Addiction of the National Research Council announces a large collaborative research in alkaloidal chemistry by chemists and pharmacologists of this country. Apparently the present object of the committee is to prepare a non-habit-forming substitute for morphine that will yet possess the desirable action of morphine. (Jour. A. M. A, March 14, 1931, p. 863).

What One Newspaper Did to Protect the Public Against Charlatans.—Last July, the Philadelphia *Record* started to look into the problem of medical quackery and published a most interesting and enlightening series under the general title "Bootlegging the Healing Arts." The *Record* called for no help from the medical profession, either locally or nationally. The *Record* reports that thirty-seven cases were brought up with thirty-five convictions. (Jour. A. M. A., March 14, 1931, p. 883).

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# Book Announcements

**New and Nonofficial Remedies, 1931,** containing descriptions of the articles standing accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1931. Cloth. Price, postpaid, $1.50. Pp. 481 + LVI. Chicago: American Medical Association, 1931.

This volume is the annual publication of the Council on Pharmacy and Chemistry of the American Medical Association giving the latest authentic information concerning those of the newer medicinal preparations found worthy of the consideration and use of the medical profession. Each year the Council scans the general articles under which the various preparations are classified and revises these to conform to the latest and best medical thought. Important revisions have been made in a number of the general articles and in the description of various preparations.

*New and Nonofficial Remedies* should be in the hands of all who prescribe drugs. The book contains information about the newer materia medica which cannot be found in any other publication.

**Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1930.** Cloth. Price, $1.00. Pp. 91. Chicago: American Medical Association. 1931.

This book is essentially a record of the negative actions of the Council on Pharmacy and Chemistry of the American Medical Association; that is, it sets forth the findings concerning medicinal preparations which the Council has voted to be unacceptable for recognition and use by the medical profession. Many of the reports record outright rejection or the rescinding of previous acceptances; others report in a preliminary way on products which appear to have promise but are not yet sufficiently tested or controlled to be ready for general use by the profession.

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# Editorial

**Appendicitis in Children.**

Practitioners are often "put to it" to make a diagnosis in children with pain in the abdomen. Abdominal pain in the child or infant is often treated by the mother with purgatives; often the condition is treated with paregoric; the attack of pain is often overlooked or given scant consideration. If the doctor is called, the diagnosis may be made difficult by an irritable or frightened child, by difficulty in getting a satisfactory history, by remoteness of laboratory facilities, such as blood count and urinary examinations to help in arriving at differentiation between acute pyelitis, upper respiratory infection, urinary calculi, and ordinary food poison with intestinal upset.

In view of these things, one may read with interest comments and experiences on this subject, based upon a study of one hundred and eleven cases of appendicitis coming to operation, as brought out by Tasche (*A. J. M. Sc.*, July, 1931, page 87). In the practice of the physician in the home, the diagnosis of the cause of abdominal pain becomes urgent. It is a question often that arises at the most inopportune time, often after midnight, often on holidays or Sundays, when laboratory assistance is difficult to command. For this and other obvious reasons, it is not unwise to note the published consideration of this subject by Dr. Tasche.

In general, it has become accepted that appendicitis occurs in the infant relatively rarely. All these children were under thirteen years of age. The youngest was an infant of two years and seven months, and one two years and ten months. Both had acute suppurative appendicitis and both recovered after operation. Of this group of 111 cases, only 2.6 per cent were under five years. The sexes were equally affected in the group. It was noted that the seasonal incidence favored the greatest number in the fall and the next in the summer months. While the association of recent respiratory infection, contagious disease, or gastro-intestinal disorder was noted, it was difficult to prove in the histories; however, these were observed to be suggestively frequent. It was found to be positively imperative, in the matter of diagnosis, to have a complete physical examination in order to differentiate tonsillitis, pneumonia, pyelitis, and other conditions simulating acute appendicitis in childhood.

In classifying such cases, Tasche arranged his cases under five groups.

There was the recurrent appendicitis. In twenty-nine of his cases there were previous attacks of right-sided pain. These operations were done in the interval period. Clinically, the attacks were mild in type. Microscopic scrutiny of the twenty-nine appendices showed inflammatory changes in nine cases, suppura-

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tion in two, and no inflammation in eighteen. Thus eighteen operations were apparently not justified by the laboratory reports, although there had been pain in the right side with other clinical signs of the disease.

There was acute suppurative appendicitis showing a figure of thirteen cases in the group. There were no deaths following these operations. Clinically, three cases were considered to be mild, eight moderately severe, and two severe. Of the thirteen appendices, ten showed suppuration under microscopic examination, but three were only slightly inflamed. The average leucocyte count in this group of thirteen was 13,000, with an average polymorphonuclear percentage of 84.

There was a group of acute suppurative appendicitis with local peritonitis. There were twenty-five of this type of cases operated upon and one died. The average leucocyte count was 17,000, with an average polymorphonuclear percentage of 83. Clinically, before operation seventeen were considered moderately severe and seven severe cases. One was thought to be mild. Microscopic examination showed all of these appendices as suppurating and eleven had a temperature of 101° to 102° F.

There was a group of acute suppurative appendicitis with abscess formation. In this group there were thirty-three cases. At operation, all abscesses, whether localized around the appendix, or remotely situated (as pelvic, subdiaphragmatic, sub-hepatic, or elsewhere), were included in this group. Time of the operation as related to the onset of the clinical symptoms was not declared, but the average white cell count in this group was 21,000, with an average polymorphonuclear count of 88 per cent, and the types of symptoms were classified by designating one mild, twelve moderately severe, and three as very severe or moribund. The pulse rates were noted as being higher than was warranted by the degree of temperature.

Finally, there was a group of these cases denominated acute suppurative appendicitis with diffuse peritonitis. In the group there were eleven cases. Three of the eleven, or 28 per cent, died. At operation, all the appendices showed suppuration and in all there was diffuse peritonitis. There was an average leucocyte count of 21,000, with 81 per cent polymorphonuclears. Temperature was more than 100° F. in some; in five it was 103° F. or over. The pulse rate was increased, but in two only was it markedly so. The operation was performed and had for its purpose the removal of the appendix and drainage of the abdomen with numerous soft rubber tissue drains of the Penrose type.

This review of the experiences of a surgeon in 111 cases of appendicitis furnishes an opportunity to present this subject to our readers. In the daily practice of the physician, abdominal pain in the child presents perplexing problems and responsibilities that weigh on the mind of the medical attendant. Any and frequent considerations of these questions, as depicted by the publications of responsible observers, can but be an aid to the practitioner as he attempts to do the "right" thing at the bedside. "To err is human," and to "err on the right side" is an adage, but to be "right" as often as possible, erring neither on the right nor the wrong side, is the aim of every right-thinking medical attendant. To attain that state of accuracy in diagnosis of a child's abdomen means renewed and repeated study of the subject.

A careful perusal of the data contained in the bibliography supporting the article presented by Dr. Tasche, as well as the subject matter of the paper, offers our readers, who wish to review this important subject, an unusually favorable chance to do so.

**Iron and Copper in Anemic Children.**

Any work in therapeutics that points toward improvement of the anemic child must hearten the general practitioner. Probably few clinical conditions arrest the attention of the practitioner in the household as does the pallid child. Such cases necessarily require a thorough clinical examination. This should be done in the most complete way. But, often in the history of the patient, or in the ordinary physical examination of the "stripped" child, even before laboratory aids are brought to bear on the study of the case, are found the primary factors that have brought about the anemic condition. It goes without saying that these and all causes of the anemia should be removed so far as possible. Often, this step alone in the management of such cases is enough to establish a reasonably rapid return to normal blood values. This is particularly true when the child is placed in salubrious and wholesome surroundings. There are, however, conditions of prac-

tice when medical measures need to be applied in order to bring about speedy improvement or to reach a state of normal health within a reasonable time. The use of iron in anemia has been of long standing and copper has had its place in medicine. For the past two decades, however, the popularity of these hematinics has been much on the wane, due to the more or less unfavorable comments on the part of research workers and due to the general trend of the times toward therapeutic skepticism in the use of remedies of this nature.

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A recent paper by Lewis,* in its opening paragraph, indicates a series of observations that have been reported, touching upon the action of iron and copper in the regeneration of hemoglobin. Lewis cites the observations of Hart, Steenbach, Waddell and Elvehiem (Iron in Nutrition; VII. Copper as a Supplement for Hemoglobin Building in the Rat, *Journal Biological Chemistry*, May, 1928). He gives the work of McHargue, Healy and Hill, in the same publication, which goes to show that copper has an important function in the formation of hemoglobin. The work of these and other research workers served as the basis for the use of iron and copper in the treatment of anemia in children. Lewis undertook such an inquiry soon after this announcement.

Lewis made a study of thirty-four children with secondary anemia. All were observed for at least three weeks before the treatment by iron and copper was started. The hemoglobin and red blood cells were determined. The ages of the children varied from six months to seven years. During the clinical observation, hemoglobin and red cell counts were made each week. The changes were noted during iron administration alone and then during iron and copper in association. These thirty-four cases were observed from one month to three months before treatment was begun.

Clinical improvement was gradual in all cases; there was an increase in appetite and general well being and a gain in weight. The red blood cells increased promptly. In some, says Lewis, a level of 4,500,000 per cubic millimeter was attained within a month. Hemoglobin rose less rapidly but it increased. The case that suffered from infection exhibited a slower rate of regeneration, particularly one who had tuberculosis of the hip. This one showed no improvement after fourteen weeks of treatment with iron, copper and blood transfusion. But all anemic patients in the nutritional group showed prompt and definite improvement.

In these investigations, the author used saccharated ferrous carbonate in amounts varying from 15 to 60 grains (0.1 to 4 Gm.) daily, and copper sulphate, 0.5 per cent solution, giving from one to two tablespoonsful three times a day.

*Jour. A. M. A., April 4, 1931, page 1135.

**Diabetes and Operations.**

Diabetes has always been a deterrent, more or less, to surgical operations. Rightly so, because diabetics have been recognized as poor surgical risks. Often in the past, emergency operations, operations that appeared to be imperative, were deferred or given up because of the established conviction that to operate would be to bring more immediate and fatal termination. Such advanced or severe diabetics suffered the hardship of the pre-insulin era in medicine when it was not known that patients, even with severe diabetes, might be much improved by proper administration of insulin and dietary management. It is now with a sense of greater confidence that surgical operations may be undertaken on the diabetic. Pathology of the complications of chronic diabetes not infrequently calls for the intervention of surgery. Acute surgical maladies may arise in chronic diabetes. Acute infections may easily occur in the diabetic and take on a rapid and malignant course demanding surgical treatment. All such patients in these days, with the instant and skilful aid of internal medicine, that administers insulin and dietary treatment for a proper period of time in anticipation of reaching the best state for operation, have a much better chance for recovery than at any time in the history of medical and surgical practice.

Again, surgical practice may secure for itself a high percentage of successful operations, as the presence of the latent or mild case of diabetes is recognized and treated prior to the operation. It is an accepted course of action in the hands of prudent men that every case of diabetes is potentially a grave surgical risk. No effort should be wanting in the study of surgical patients to detect and treat the mild, transient, or latent diabetic prior to operation. Acute infections and chronic pathology both,

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in the mild diabetic, take on a graver aspect than in non-diabetics.

One has only to review mentally the pathogenesis and metabolic status of the diabetic body to appreciate the importance of the plea to lay careful hands upon the diabetic, whether mild or severe. One has much likewise to reassure him as the knowledge of insulin and dietary medication of this disease through the past ten years is remembered and appreciated.

# President's Message

**High Lights of Annual Meeting, and Other Items of Information About the Roanoke Meeting, October 6th, 7th, and 8th.**

1. A preliminary program will be presented in the September issue of the MONTHLY.

2. A special Program will be sent each member in advance of the meeting.

3. Dr. Russell L. Cecil, of New York, will deliver the Annual Address on Medicine, on Tuesday night, October 6th.

4. The Symposium on Mental Hygiene will be opened on Wednesday morning by an eminent Author and Clinician, and will be discussed by authoritative leaders in Neurology and Psychiatry, who will stress its importance in the practice of Medicine and Surgery.

5. On Wednesday night, October 7th, the new Health Commissioner of Virginia will be formally introduced to the profession, and brief reports of what has been accomplished by some of the special Committees of the Society will be made.

6. Most of Wednesday and Thursday, the 7th and 8th, will be devoted to scientific papers by members.

7. Part of Thursday's meeting (afternoon session) will be held at Catawba Sanatorium, when papers on Tuberculosis will be read, and cases demonstrated.

8. Lunch on Thursday will also be served at the Sanatorium.

9. After the night Sessions of Tuesday and Wednesday, the local profession of Roanoke will entertain the visiting physicians.

10. On Tuesday afternoon, October 6th, the local Medical Faculty of Roanoke will hold a clinical meeting, at which visiting and local distinguished clinicians will lecture upon and demonstrate cases of Arthritis and Rheumatism, Pneumonia, etc., and also lecture and demonstrate cases of Obstetrics, Gynecology, and Diseases of Children.

This promises to be a most instructive and unusual clinical session, and any member of the Society desiring to have consultation in regard to any personal patient is invited to confer with the General Chairman of Arrangements, Dr. W. L. Powell, Roanoke, Va., in advance.

11. The Woman's Auxiliary to the State Society, aided by the local Committee of Ladies, is preparing a most interesting program for their sessions, and invites the women of all doctors' families to attend.

12. The Roanoke physicians, likewise, most cordially invite every member of the Society to attend this Annual Meeting in "the Queen City of the Southwest."

In our opinion, the Program Committee and the Roanoke physicians, have prepared for us an unusually attractive and varied Program, and it is hoped that there will be a very large attendance.

J. ALLISON HODGES, M. D.,
*President, Medical Society of Virginia.*

# Department of Clinical Education
## OF THE MEDICAL SOCIETY OF VIRGINIA

**Education of Physicians.**

It is well at this time to check up, as it were, on the work of this Department. How far have we gone? How much interest has been shown? How much progress has been made? What have we learned by our clinical meetings? There is quite a diversity of opinion as to whether the mixed clinic or one confined

to a single subject or disease is most advantageous and popular.

We have had some very successful clinical meetings in which the subject has been obstetrics, or cancer, or tuberculosis, or mental diseases, etc. One of our very prominent coworkers, who is also a teacher, thinks this is the best kind of clinical meeting and will with the proper management become the most popular and informing: on the other hand, a diversity of subjects is perhaps most likely to attract the general practitioner who often feels that he has gained more when learning even a little about a number of subjects, rather than concentrating on one subject. There has also been a difference of opinion as to whether it is best to have as leaders in the clinical meetings resident practitioners or prominent teachers and clinicians from a distance. The choice has been left to the officers of the local societies, and doubtless for the present that policy should be continued.

It is stimulating and encouraging to know that there is a real and increasing interest in this continued education of physicians.

There is this also to be said. These meetings throughout the State are serving to bring the men of the Medical Society of Virginia in closer personal touch with each other, and this will necessarily strengthen and build up the State Society. We are hoping this will result in a larger attendance at our State Society meetings and a greater number of clinical meetings throughout the coming year in each of the Districts.

I have before me a copy of an address* delivered by Dr. Greer Baughman, of Richmond, at the University of Virginia Institute of Public Affairs, July the 1st, in which he discusses the education of the doctors of Virginia from the earliest times. I am using here the last part of his intructive article because of its timely appropriateness. Dr. Baughman, after a quite careful review of the education and preparation of doctors from the earliest days of the English settlements in this country, continues in concluding—

"From this brief survey of the education of the doctor from the establishment of the first permanent settlement at Jamestown in 1607 and a record of those that left a sufficient impression upon their times to have their names recorded, we must conclude that education is the most important element in their success.

"Granting that the native ability of the doctors of the seventeenth century was as great as in subsequent times we note with sorrow that the great majority of them were without honor in their community and we attribute it to a lack of education. In proportion as educational opportunities presented themselves and were grasped the doctor advanced in society. Those that really made a name for themselves almost without exception did post-graduate work.

"Medicine in this day is making such enormous strides that a doctor who does not read, consult with his colleagues, attend medical meetings, and make contact with teaching centers is hopelessly lost.

"So much is this true that the cities are becoming overrun with doctors and the country is being depleted. The reason is perfectly obvious—the better men want to touch elbows with progressive medicine and they believe they can make better living in the cities.

"The medical profession can very easily return to the conditions of the sevententh century in Virginia if the doctor will continue to practice with the knowledge that he had when he got his diploma. The public will then diagnose and treat their own diseases with the aid of popular up to date medical books.

"From the standpoint of education there are two groups in the medical profession—a kynetic group that demand more instruction, more clinics, more opportunities for advancement than we can give them and the potential group that are perfectly contented and even resent an attempt to activate them. These two groups are to be found in the cities and towns as well as the country.

"The department of education of the Medical Society of Virginia has done a splendid piece of work for education in fostering regional clinical conferences over the State. No one could be offended if Dr. J. Allison Hodges were singled out for praise because of interest in this work.

"The sort of education that the doctor needs after he has left college might be designated as acute and chronic. The chronic is that general medical information both scientific and practical that will bring him up to date. The acute is that which is needed at once to save lives.

*This address will appear in full in the September issue of the Monthly.

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"A certain part of the acute education the Board of Health most ably attends to. The Board of Health attends to education about the communicable diseases in the interest of the public as a whole. Those troubles that belong to the individual and cannot be given to anyone else are particular problems for the doctor. Just at present two problems which must be solved by the dotcors are the high obstetrical and cancer mortality.

"One-third of the women who die as a result of pregnancy or childbirth can be saved if they contact a doctor who in turn examines them properly and treats them the right way. Contact with a doctor who can recognize cancer early enough and will recommend an operation will save most cases. Contact with a trained doctor is the answer in both cases.

"A joint committee made up of equal representation from the University of Virginia, Medical Society of Virginia, and the Medical College of Virginia have decided that in the case of the obstetrical and cancer problem an emergency exists and have recommended that the situation be met with a different plan than that set up for general post-graduate instruction with regional post-graduate conferences, etc.

"They have recommended that a doctor be employed and be sent with whatever help he may need to the doctors individually or in groups in order to instruct the ones that need instruction in prenatal care and in office gynecology. This doctor will have to be a diplomat; above all he must be not a practicing physician. He must devote his whole time to instruction and not be connected with any clinic or hospital.

"In this way we may be able to save many lives and to open a new means of livelihood for the doctor."

I. C. Harrison, M. D.,
*President-Elect and Chairman, Department of Clinical Education.*

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**Information**

All members of the Medical Society of Virginia are requested to write for any information desired on any subject relative to these Extension Courses in Graduate Medical Education, either to the Executive Secretary, Mr. George W. Entsler, P. O. Box 707, University, Va., or to the Chairman of the Department.

# Proceedings of Societies

**Virginia State Board of Medical Examiners.**

Of the ninety-seven applicants who came up for examination to practice medicine in Virginia, at its June, 1931, session, ninety-six were successful. Sixteen doctors were granted certificates by reciprocity and one chiropodist was admitted to practice in Virginia. It is stated that the grades made by the applicants were exceptionally good and the examiners commented upon the splendid appearance of the applicants as a group.

Following is a list of applicants who successfully passed the Board in June:

Dr. Thomas L. Allman, U. S. Naval Hospital, Brooklyn, N. Y.
Dr. John J. Ambler, Richmond, Va.
Dr. Harold Irvin Amory, Richmond, Va.
Dr. Dewey L. Anderson, Charlottesville, Va.
Dr. Drury B. Armistead, Richmond, Va.
Dr. Harloe Bailey, Saltville, Va.
Dr. Tyler R. Boling, Jr., Burke's Garden, Va.
Dr. Hugh Benton Brown, Jr., Emory, Va.
Dr. Wm. A. Brown, University, Va.
Dr. Robert C. Bunts, Pulaski, Va.
Dr. Paul J. Bundy, Lebanon, Va.
Dr. R. D. Butterworth, Butterworth, Va.
Dr. Charles C. Canada, Grottoes, Va.
Dr. Edward G. Cannon, Richmond, Va.
Dr. Julius Caplan, Portsmouth, Va.
Dr. G. D. Capaccio, University, Va.
Dr. C. W. Carper, New Castle, Va.
Dr. William M. Chew, University, Va.
Dr. Leslie B Copenhaver, Bristol, Va.
Dr. Meyer Cohen, Richmond, Va.
Dr. Frank P. Coleman, Richmond, Va.
Dr. W. M. Cornell, Atlanta, Ga.
Dr. J. B. Cousar, Waynesboro, Va
Dr. R. B. Cralle, Jr., Richmond, Va.
Dr. Oscar W. Cranz, Richmond, Va.
Dr. Walter E. Daniel, Jr, Weldon, N. C.
Dr. Fred G. DeBusk, Saltville, Va.
Dr. D. A. Dent, Richmond, Va.
Dr. Paul L. Dent, Richmond, Va.
Dr. John Newton Dunn, Richmond, Va.
Dr. Grant R. Elliott, Richmond, Va.
Dr. Bob L. Field, Norfolk, Va.
Dr. Carlyle G. Flake, Richmond, Va.
Dr. Dominick J. Foglia, Norfolk, Va.
Dr Wm. B. Fuqua, Jr., Radford, Va.
Dr. Samuel H. Garst, University, Va.
Dr. George Gay, III, Richmond, Va.
Dr Isaac K. Givens, Norfolk, Va.
Dr. Robert E. Glendy, University, Va
Dr. Meyer H. Goldstein, University, Va.
Dr. James A. Gooch, Richmond, Va.

Dr. Samuel B. Grims, University, Va.
Dr. W. H. Hall, University, Va.
Dr. Ruth Schwarz Hart, Winter Park, Fla.
Dr. S. S. Hamilton, Jr., Richmond, Va.
Dr. Ira L. Hancock, Jr., Richmond, Va.
Dr. Frank W. Hewlett, Richmond, Va.
Dr. Angus Hinson, University, Va.
Dr. Wm. Hume Hoskins, Dunnsville, Va.
Dr. Joseph W. Houch, Harrisonburg, Va.
Dr. Edward D. Hudson, Lahore, Va.
Dr. Harry Gilman Hudnall, Covington, Va
Dr John Thomas James, Galax, Va.
Dr. John B. James, Richmond. Va.
Dr. Cyril James C. Kennedy, Richmond, Va.
Dr. Otis Gardner King, Arcola, N. C.
Dr. C. F. Kincheloe, Jr., East Falls Church, Va.
Dr. C. W. LaFratta, Richmond, Va.
Dr. James C. LeFon, Glen Allen, Va.
Dr. Hermann J. Lukeman, Saltville, Va
Dr. Edward H. Major, Wilkes-Barre, Pa.
Dr. Edward M. Mann, Elizabeth City, N. C.
Dr. Herman E. Martin, Richmond, Va.
Dr. Arthur Mazyck, Jr., University, Va.
Dr. Jesse McCall, Tazewell, Va.
Dr. Thomas P. McKee, Saltville, Va.
Dr. L. S. Meriwether, University, Va.
Dr. H. W. Miller, Richmond, Va.
Dr. Tom H. Mitchell, Richmond, Va.
Dr. Charles O. Moody, Norfolk, Va.
Dr. Margaret E. Moriarty, University, Va.
Dr. J. C. Neale, Jr., Dumbarton, Va.
Dr. Wm. King Newton, Fountain, N. C.
Dr. Joseph W. Owen, Richmond, Va.
Dr. Thomas E. Painter, Pulaski, Va.
Dr. Wm. H. Parker, University, Va
Dr. Thomas B. Payne, Fredericksburg, Va.
Dr. J. M. Preston, IV, Winston-Salem, N. C.
Dr. Edward C. Rawls, Richmond. Va
Dr. Fred T. Renick, Richmond, Va.
Dr. Wyatt E. Roye, Richmond, Va.
Dr. George H. Salomonsky, Norfolk, Va.
Dr. Adolph S. Sanchez, Richmond, Va.
Dr. John H. Scherer, University, Va.
Dr. Asa E. Seeds. Waverly, Va.
Dr. Eldridge C. Simmons, Petersburg, Va.
Dr. Henry C. Spalding, Richmond, Va
Dr. Jack Spencer, Lynchburg, Va.
Dr. Ben Steingold, Berkley, Va.
Dr. A. C. Stutsman, Baltimore. Md.
Dr. Wm. G. Talmage, Petersburg, Va
Dr. W. L. Thomas, Jr., University, Va.
Dr. C. R. Titus, Richmond, Va.
Dr. D E. Watkins, Jr., Fork Union, Va.
Dr. Bliss K. Weems, University, Va.
Dr. W. M. Whitehead, Lovingston, Va.

**The James City—New Kent Medical Society**

Held its regular meeting at Dr. J. M. Henderson's cottage, on the York River, on July 2nd. The meeting was called to order by the president, Dr. A. M. Sneed, of Toano, and the minutes presented by the secretary, Dr. J. R. Tucker, of Williamsburg, were approved. Dr. J. R. Parker, Providence Forge, was elected delegate to the State Society meeting, at Roanoke, in October, and Dr. J. R. Tucker alternate. Dr. Sneed was appointed to write a formal letter to all the county societies, urging them to discuss at the State meeting the colored insurance blanks, which have become such a nuisance to the doctor, and have some standard form blanks adopted whereby the individual may obtain his insurance without the doctor having to visit his home each time.

Previous to the meeting there was a most enjoyable fishing trip, for which Dr. Henderson was host.

**The Fauquier County Medical Society**

Was entertained by Dr. Wade C. Payne, president of the society, at his residence in Haymarket, Va., on June 25th. Dr. Payne, in calling the meeting to order, made a very impressive speech of welcome, in which he covered the progress made by the society and the relation that exists between all its members. He urged their attendance at the meeting of the State Society in Roanoke. Dr. John A. Gibson, of Leesburg, Va., spoke on "Midwives in Loudoun County," giving many statistics and how the situation was being handled by the State Board of Health. This talk was discussed by several members. Dr. Richard Mason reported several very interesting obstetrical cases. Dr. W. G. Trow read a very humorous paper on measles. After the businsss, an excellent supper was served by Dr. and Mrs. Payne.

Dr. J. R. Allen is secretary and Dr. M. B. Hiden assistant secretary of this society.

# News Notes

**Our New State Health Commissioner.**

Dr. Warren F. Draper, appointed State Health Commissioner of Virginia, to succeed the late Dr. Ennion G. Williams, entered upon his duties at headquarters in Richmond, on the morning of July 16th. Dr. Draper is assistant surgeon general of the U. S. Public Health Service. He was appointed to his new position by Governor Pollard and serves on assignment from the Federal Service, which permits him to retain rank and privileges attained during his twenty-one years with the

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government. His appointment at this time is to fill the unexpired term of Dr. Williams, terminating July 1, 1932.

While a native of Massachusetts and a graduate of the Harvard University Medical School, Dr. Draper has been a resident of Virginia for the past seventeen years and has made his home at Cherrydale, in Arlington County. His work with the Federal government has brought him in frequent and intimate contact with most of the officials of the Virginia State Health Department.

We welcome Dr. Draper to this new position and stand ready to assist him in the furtherance of his work in preventive medicine in our State.

**Keep This Date in Mind!**

As time flies so, it is well now to mark the dates of October 6th, 7th and 8th on your calendar for the meeting of the Medical Society of Virginia in Roanoke. Don't fail to make hotel reservations early.

The local doctors are making plans for attractive entertaining and clinics. The president, Dr. J. Allison Hodges, and the Program Committee are arranging an excellent scientific program. Members interested in presenting papers at this meeting should send their titles with short abstracts to the Society's offices at 104½ West Grace Street, Richmond, *by August 10th.*

"Mental Hygiene" is the subject which has been selected for the symposium and this should be of especial interest to general practitioners as it is to deal largely with prevention of mental diseases.

Hospitals, medical organizations, colleges and individuals wishing to have scientific exhibits, should communicate at once with Dr. C. Bruce Morton, University, Va., chairman of the Committee on Scientific Work and Clinics.

There will be plenty of diversion for the ladies as well as the men, so all doctors are urged to bring the ladies in their families with them.

For those who golf, there will be a golf tournament on Tuesday, October 6th, at 10 A. M., at the Roanoke Country Club. All players participating in the tournament will be required to have their own clubs furnish them their handicaps by letter or they will be barred from tournament play. Prizes will be awarded by the Roanoke Academy of Medicine to the player making the low gross score and the low net, for keeps. There will also be a booby prize for the player who has the greatest number of alibis. Luncheon will be served to the participants of the tournament and a good time will be had by all.

For the information of delegates and alternates from the local societies, it is well to state that much important business will be transacted in the first meeting of that body to be held on Tuesday afternoon at 2:30. The clinics will also be held that afternoon and, with an invited speaker on the program that evening, the first day should be one of the important days.

Attention is also called to the fact that there will be a luncheon for members at Catawba Sanatorium on Thursday, following which there will be some interesting papers, so come prepared to stay Tuesday, Wednesday and Thursday.

**Married.**

Dr. Warren Stone Bickham, formerly of New York but for the past three years of Richmond, Va., and Miss Alice Martin, of Brooklyn, N. Y., June 30th.

Dr. John R. Hamilton, Nassawadox, Va., and Miss Gladys Lee, Richmond, Va., June 10th.

Dr. William Carey Henderson, also of Nassawadox, Va., and Miss Mary Ferebee, Eastville, Va., June 27th.

Dr. C. Eugene Perkins and Miss Eleanor Maxwell, both of Philadelphia, Pa., June 28, 1930. Dr. Perkins is an alumnus of the Medical College of Virginia, Richmond, in the class of '23 and has made his home in Philadelphia for several years.

Dr. Marshall Peterson Gordon, Jr., of the class of '27, University of Virginia but now connected with Johns Hopkins Hospital staff, Baltimore, and Miss Gladys Campbell, Saltville, Va., July 9th.

Dr. John Thomas James, of this year's class, University of Virginia, and Miss Mary Bryant, of Marion, Va., June 25th. They are now in Des Moines, Iowa, where Dr. James has accepted an appointment as interne at the Iowa Methodist Hospital.

Dr. James Clarence LeFon, of the class of '31, Medical College of Virginia, and Miss Katheryn Elizabeth Schooles, Glen Allen, Va., June 20th. Dr. LeFon will be a member of

the resident staff at Protestant Hospital, Norfolk, Va., for the coming year.

Dr. John Howard Childrey, Rochester, Minn., of the class of '26, Medical College of Virginia, and Miss Corra Hanrahan, of Geneva, N. Y., June 23rd.

Dr. Samuel Byron Pope, Jr., of the class of '30, recently interning at the Protestant Hospital, Norfolk, Va., and Miss Emma Lucille Ryerson, Richmond, Va., June 24th. They are now at home in Glen Cove, L. I., where Dr. Pope is a resident in the North Country Community Hospital.

Dr. Llewellyn Lee Ashburn, Marine Hospital, New York, and Miss Serena Dryden, Crisfield, Md., July 14th. Dr. Ashburn graduated from Medical College of Virginia, Richmond, in 1930, and at once entered the U. S. Public Health Service as an assistant surgeon. He served his internship at the Marine Hospital, Norfolk, Va.

Dr. Richard Moncure Reynolds, Norfolk, Va., and Miss Margaret Elizabeth Sheppard, Richmond, Va., in June. Dr. Reynolds graduated from the Medical College of Virginia, Richmond, in 1929, and interned at St. Vincent's Hospital, Norfolk, before entering private practice in that city.

Dr. William Price Bittinger, Summerlee, W. Va., and Miss Susannah Brient, Englewood, Tenn., May 27th. Dr. Bittinger is an alumnus of the Medical College of Virginia.

**Dr. Toson O. Summers**

An alumnus of the Medical College of Virginia but now a surgeon in the U. S. Navy, with the rank of Lieutenant Commander, has just been transferred from St. Thomas, Virgin Islands, where he was the chief municipal physician at the U. S. Naval Hospital, to the U. S. Naval Hospital, at Brooklyn, N. Y. He visited relatives in and near Richmond, Va., his former home, en route to his new post.

The *Saint Thomas Mail Notes*, published in the Virgin Islands, was most complimentary of the work done by Dr. Summers during his stay in the Virgin Islands. The paper states that Dr. Summers had won a big reputation as an eye, ear, nose and throat specialist in their midst and had won the appreciation of the people of St. Thomas. It further says that "Dr. Summers is a true representative of the type of doctors who have made the medical service of the American Navy famous and his departure surely will be felt."

**News Notes from the Duke University School of Medicine and Duke Hospital.**

The following appointments, effective July 1st, were made to the faculty: Dr. Bayard Carter, Professor of Obstetrics and Gynecology, and Dr. Edwin C. Hamblen, Associate Professor of Obstetrics and Gynecology.

In addition to the above, there were added to the staff one resident, two assistant residents, nine internes and one Fellow.

July 20th marked the close of the hospital's first year of operation. During that time 3,417 patients were admitted to the hospital, 1,439 operations were performed and approximately 2,972 patients were treated in the Out-Patient Clinic.

On July 20th and 21st, Dr. Wilburt C. Davison, Dr. Alfred R. Shands, Jr., and Dr. Bayard Carter attended the Southern Pediatric Seminar, at Saluda, N. C., at which they gave lectures.

**Dr. Thomas N. Spessard,**

Of the class of '27, Medical College of Virginia, after spending two years at the Neurological Institute of New York, studying in neurology and neuro-surgery, has located in Roanoke, Va., with offices in the Medical Arts Building. He is limiting his practice to neurology and neuro-surgery.

**Dr. Charles Bagley, Jr.,**

Baltimore, Md., was elected president of the Society of Neurological Surgeons at its meeting in Richmond, Va., in June.

**The American College of Physicians**

Will hold its Sixteenth Annual Clinical Session at San Francisco with headquarters at the Palace Hotel, April 4-8, 1932. Following the Clinical Session, a large percentage of the attendants will proceed to Los Angeles where a program principally of entertainment will be furnished April 9th, 10th and 11th.

Announcement of the dates is made particularly with a view not only of apprising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1932 meetings.

Dr. S. Marx White, of Minneapolis, is President of the American College of Physicians, and will arrange the Program of General Sessions. Dr. William J. Kerr, Professor of Medicine at the University of California Medical School, San Francisco, is General Chairman of local arrangements, and will be in charge of the Program of Clinics. Dr. Francis M.

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Pottenger, of Monrovia, is President-Elect of the College, and will be in charge of the arrangements at Los Angeles. Mr. E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming Session.

**Return From Medical Field Service School.**

The following Virginia doctors were among the Medical Reserve Officers in training at Carlisle Barracks, Pa., from July 5th to 18th: Lt. Col. Charles M. Edwards and Lt. Col. Wm. Robt. Weisiger, both of Richmond; 1st Lt. Leslie B. Copenhaver, Bristol, Va., but now at Memorial Hospital, Richmond; 1st Lt. Jacob C. Harshbarger, Harrisonburg; 1st Lt. Joseph M. Moore, Petersburg; 1st Lt. Elmer R. Moorman, Roanoke; 1st Lt. Leslie E. Morrissett, Richmond; 1st Lt. Davis W. Ritter, Winchester, and 1st Lt. Delbert T. Saffer, Middleburg.

**Dr. Bruce Clark,**

After a year spent at Hiwasse, Va., has returned to his former home, at Winifrede, W. Va.

**Winners in Virginia Sanitation Campaign.**

Prince George won the first prize in the three year Sanitation Campaign which ended on June 1st. Powhatan County came second and Hanover County third. In each county some organization or group of organizations assumed responsibility for the campaign. In Prince George County it was the Federation of Community Leagues, in Powhatan County it was the Home Demonstration Clubs and in Hanover County it was the Federation of Community Leagues. Factors in the campaign were sewage disposal, safe water, adequate screening, and fly control.

Prince George County which won the first prize, $500, has approximately 2,281 homes and 91 per cent of these homes was convassed by workers for the Federation. The final score for Prince George County was 65.21 out of a possible 100 per cent.

Powhatan County which won the second prize, $300, has about 1,365 homes, 88 per cent of which were reached and the final percentage of secured sanitation was 64.98.

The third prize, $200, went to Hanover County which has more homes than the other two counties combined, very nearly 3,800, and about 75 per cent of these homes were visited by the Federation. The percentage score of Hanover was 46.45.

It was said at the Health Department that there was not much difference between the leaders and Princess Anne County and King William County which came in fourth and fifth. It was also said that Charlotte, Loudoun, Mecklenburg and Charles City, the next in order, made excellent showings.

**Dr. James S. Richardson,**

Recently at Hurley, Va., has located at Grundy, Va. Dr. Richardson is a member of the class of '29, Medical College of Virginia.

**Dr. Ezekiel Promoted.**

Dr. G. A. Ezekiel, of Richmond, Va., has been promoted from the rank of Lieutenant Colonel to that of Colonel in the Medical Reserve Corps of the U. S. Army, effective June 25th. Dr. Ezekiel served in the Medical Corps in France during the World War.

**Dr. Archer A. Wilson**

Has just opened offices in Professional Building, Charleston, W. Va., for the practice of neurology and neurological surgery, having just completed a two years' appointment as resident in neuro-surgery at Medical College of Virginia, Hospital Division, Richmond. During his study in Richmond, he took several months of special work at the Boston City Hospital, Boston, Mass. Dr. Wilson graduated from the Medical College of Virginia in 1923, and was engaged in general practice in West Virginia for five years before entering this specialty.

**The American Public Health Association**

Will hold its sixtieth annual meeting in Montreal, Quebec, September 14th-17th, with headquarters at the Windsor Hotel. Information about this meeting may be obtained from headquarters of the Association, at 450 Seventh Avenue, New York City.

**Dr. Allen H. Moore,**

Doylestown, Pa., who formerly practiced at Clover, Va., and then for five years at New Market, Va., sailed on July 4th for London, where he planned to do some work in Internal Medicine. Later he will continue this work in Paris.

Dr. Moore was recently elected president of the Optimist Club International and has also been made editor of the *Bucks County (Pa.) Medical Bulletin.*

**Dr. W. P. Wheless,**

Recently at the Children's Hospital of Michigan, Detroit, has located for practice at Spring Hope, N. C.

**Dr. Charles Phillips,**

After a service at the Medical College of Virginia from 1924 to 1931, recently resigned as professor of pathology there, to become Director of Laboratories at the Scott & White Clinic, Temple, Texas. He entered upon his duties on July 1st.

**Dr. W. E. Jennings,**

Danville, Va., returned the first of July from New York, after doing post-graduate work on Asthma and Hay Fever at the Cornell University Medical College, under Drs. Arthur F. Coca and Robt. A. Cooke.

**Interstate Post-Graduate Medical Association of North America.**

The program of the meeting of this Association, to be held at Milwaukee, Wis., October 19th-23rd, will include speakers of international prominence. The branches to be considered are: Surgery, orthopedics, medicine, urology, neurology and psychiatry, oto-rhino-laryngology, ophthalmology, dermatology, radiology, pediatrics, and obstetrics and gynecology. Every practicing physician can find something to his liking.

The officers this year are: President, Dr. Henry A. Christian, Boston, Mass.; secretary, Dr. Edwin Henes, Jr., Milwaukee, Wis.; managing director, Dr. Wm. B. Peck, Freeport, Ill., and chairman of the Program Committee, Dr. George W. Crile, Cleveland, O.

**Dr. Ramon D. Garcin, Jr.,**

Formerly of Richmond, Va., and a member of the class of '29, Medical College of Virginia, after a service at Cumberland Street Hospital, Brooklyn, N. Y., has opened offices for the practice of internal medicine at 215 Sterling Street, corner Rogers Avenue, Brooklyn.

**Dr. S. G. Miller,**

Recently at Warm Springs, Va., announces his removal to Piney River, Va.

**Dr. B. A. Rice,**

Forest, Va., returned home in July, after a tour of several weeks in Europe.

**Argentina's Child-Welfare Congress.**

The first national congress on social service for childen in Argentina will be held in Buenos Aires September 20 to 26, 1931, under the auspices of the National Council of Women of Argentina. Among the topics for discussion in addition to general child-welfare problems will be the training of social workers and the establishment of a council of social agencies and a social-service exchange in Buenos Aires. The president of the National department of hygiene, Dr. G. Araoz Alfaro, will preside at the congress.

**American Surgical Association.**

Dr. Charles H. Mayo, Rochester, Minn., was elected president of this Association at its annual convention in San Francisco, last month, and New Haven, Conn., was selected at the 1932 place of meeting.

**Dr. John Hobart Reed,**

Of the class of '28, Medical College of Virginia, accompanied by his wife and young son, expect to leave Richmond, Va., August the 8th, for the Pacific Coast, whence they will sail for China. Dr. Reed is going out as a medical missionary and expects to be in the foreign field for seven years.

**Women Sick More But Live Longer.**

According to a report in the *Illinois Health Messenger*, women have more physical defects of a comparable character and they are more frequently ill from the diseases common to both sexes, but they live nearly two years longer on the average than do men.

Males find it much more difficult than females to survive the first year of life. During 1929 there were, for example, 4,555 deaths among male infants, against 3,348 among females, a ratio of 136 males per 100 females. In 1928 there were seventy-two male infant deaths per 1,000 births of male children, while the rate among females was only fifty-six per 1,000.

**The American Therapeutic Society,**

At its annual meeting in Atlantic City, June 5th and 6th, elected the following officers for 1931-32: President, Dr. Harvey G. Beck, Baltimore, Md.; First Vice-President, Dr. William J. Mallory, Washington, D. C.; Second Vice-President, Dr. Oscar W. Bethea, New Orleans, La.; Third Vice-President, Dr. Elsworth S. Smith, St. Louis, Mo.; Secretary, Dr. Grafton Tyler Brown, Washington, D. C.; Treasurer, Dr. Truman G. Schnabel, Philadelphia, Pa.

**Dr. A. L. Carson, Jr.,**

Of the class of '25, Medical College of Virginia, announces his new address as Fairfax, Va. Dr. Carson returned to Virginia about

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a year ago after a service at the Nursery and Child's Hospital, New York City.

**American Society of Physical Medicine.**

A call was issued before the meeting of the American Medical Association for the formation, if thought best, of the American Society of Physical Medicine. This call was sent by Dr. Willis S. Peck, of the University Hospital, Ann Arbor, Mich., to the following, who, on June 12th, made an organization accordingly:

Dr. William Bierman, New York City.
Dr. J. S. Coulter, Chicago.
Dr. F. H. Ewerhart, St. Louis.
Dr. K. C. Hannson, New York City.
Dr. C. P. Hutchins, Syracuse, N. Y.
Dr. Guy Hinsdale, White Sulphur Springs, W. Va.
Dr. Richard Kovacs, New York City.
Dr. Frank Krusen, Philadelphia.
Dr. C. O. Molander, Chicago.
Dr. Josef Nylin, Philadelphia.
Dr. Frederick O'Brien, Boston.
Dr. Ralph Pemberton, Philadelphia.
Dr. Nathan Polmer, New Orleans.

This society is to consist of members who devote their entire time to the teaching and practice of physical medicine; and of associate members who may be doctors of medicine or scientists who have contributed to the scientific advancement of physical medicine but are not devoting their entire time to its practice and teaching.

The aims of this organization are to improve the practice of physical medicine, promote research, encourage clinical investigation, and advance its teaching.

Dr. J. S. Coulter, of Chicago, was elected president, and Dr. Willis S. Peck, of Ann Arbor, Mich., was elected secretary and treasurer.

**Section on Medical Sciences, Virginia Academy of Science.**

Announcement has been received from Dr. E. C. L. Miller, Richmond, secretary of the Virginia Academy of Science, that at its recent meeting the Academy authorized the organization of a new section—a Section on Medical Sciences. The officers of the new section appointed for the coming year are: Dr. J. Shelton Horsley, Richmond, as chairman, and Dr. J. E. Kindred, of the University of Virginia as secretary. It is expected that the new section will function along the lines of Section N of the American Association for the Advancement of Science.

There are already quite a number of physicians in Virginia who are members of the Academy and others interested in the fundamental medical sciences such as anatomy, bacteriology, biochemistry, embryology, pathology, pharmacology and physiology will be welcomed to membership in the Academy and to participation in the activities of this and other sections.

The Virginia Academy of Science now has active sections in biology, chemistry, geology, physics (including astronomy and mathematics), and psychology and education. At the recent meeting in Norfolk a total of 111 papers were read before these sections.

It is confidently expected that this new section will grow rapidly as it will offer scientifically inclined physicians an opportunity to read scientific papers before an appreciative audience, to take part in stimulating discussions, and to become acquainted with other like-minded scientific men.

**Dr. W. H. Venable,**

Recently of Farmville, Va., has moved to Chatham, Va., where he has accepted the position of physician to "Chatham Hall."

**Dr. Joseph B. Graham,**

Of the class of '28, University of Virginia, who has been for the past year at Bell Memorial Hospital, Kansas City, Kan., has located in Richmond, Va., where he is connected with the Department of Surgery of Memorial Hospital.

**Hospital Associations Vote for Joint Meeting.**

At the annual meeting of the North Carolina Hospital Association recently held in Durham, representatives of that group and of the South Carolina and Virginia Associations voted to hold a joint convention, probably in Richmond, Va., in 1931. They plan, at this time, to make a special effort to bring representatives of a large number of the hospitals of the three states to this convention. The joint conference is to be arranged by the presidents and secretaries of the State Hospital Associations of Virginia and each of the Carolinas.

Among the interesting papers presented at the Durham meeting were those by Dr. J. M. Shackelford, of Martinsville, Va., on some of the difficulties of the small private hospital conducting a nursing school, and one by Dr. John Bell Williams, director of St. Luke's Hospital, Richmond, Va., on the method of determining food costs at this hospital.

At the separate business meetings, the following officers were elected:

North Carolina: President, Dr. Harold Glascock, Mary Elizabeth Hospital, Raleigh; secretary, E. G. Farmer, Carolina General Hospital, Wilson.

South Carolina: President, F. O. Bates, (re-elected), Roper Hospital, Charleston; secretary, H. H. McGill, Columbia Hospital, Columbia.

Virginia: President, Dr. Knowlton Redfield (re-elected), Jefferson Hospital, Roanoke; secretary, M. Haskins Coleman, Jr., Johnston Willis Hospital, Richmond; trustee, Dr. John Bell Williams, St. Luke's Hospital, Richmond.

**Dr. W. H. Walcott Joins Health Unit.**

Dr. W. H. Walcott, of Fairfax, Va., has recently located in Chatham and has assumed his duties as Director of the county health unit of Pittsylvania County. This unit was recently resumed by the board of supervisors in cooperation with the federal and state governments.

**State Health Officer of North Carolina.**

Dr. James M. Parrott, of Kinston, N. C., has been appointed secretary of the North Carolina Board of Health and State Health Officer of that State, to fill the vacancy caused by the death of the late Dr. Chas. O'H. Laughinghouse.

**American Psychiatric Association.**

This Association, at its annual meeting, held recently in Toronto, elected Dr. William L. Russell, White Plains, N. Y., president for the ensuing year. Dr. Clarence O. Cheney, Poughkeepsie, N. Y., was re-elected secretary. It was voted to hold the next annual meeting in Philadelphia.

**Dr. Robert L. King,**

Of the class of '28, University of Virginia, until recently resident physician in the medical service at the University of Virginia Hospital, accepted a position on the medical staff at the Virginia Mason Clinic, Seattle, Wash., and assumed his new duties on July 1st. Since graduation from the Medical School of the University, Dr. King has served a regular internship at the University Hospital and at Blue Ridge Sanatorium, Va., and for the past two years has been resident physician on the medical service at the University Hospital.

**Promoted in the U. S. Public Health Service.**

The following doctors, graduates from Virginia medical schools, are among those recently noted for promotion and commission from Assistant Surgeon to Passed Assistant Surgeon in the Regular Corps of the U. S. Public Health Service: Dr. Oswald F. Hedley, of the class of '28, Medical College of Virginia, and Dr. Frank F. Thweatt, Jr., of the same class, at the University of Virginia, Department of Medicine.

**Wanted—**

Any eye, ear, nose and throat specialist wishing a companion to take more work in his line in Vienna and Budapest sometime next winter, please correspond with No. 302, care this journal. (*Adv.*)

**For Sale—**

McCaskey System cabinet: large model, slightly used; in excellent condition; cost $285, but will sell at bargain. Address No. 299, care this journal. (*Adv.*)

**Practice and Residence For Sale.**

Fine ten-room modern residence situated on the best street in town of 4,000 population—2,000 people in near surrounding territory. Four hard-surfaced highways. Collections 91 per cent. Accredited high school. Competition all right.

This is a great opportunity for a physician with children to school. Will sell on liberal terms or exchange for a small improved farm. Now, doctor, if you want to locate in the nicest town in Virginia, address No. 303, care this journal. (Adv.)

## Obituary Record

**Dr. Charles A. Brown.**

Notice has just been received of the death of Dr. Brown on January 14, 1930, at his home in Dillwyn, Va. Death was due to angina pectoris. He was born in Bridgewater, Va., and was eighty-two years of age. Dr. Brown graduated from the Medical College of Virginia in 1872. He had been a member of the Medical Society of Virginia for twenty-two years. His daughter survives him.

**Dr. Leonidas Camden Dickerson,**

Of Stuart, Va., died in a hospital in that city, May 22nd, from diabetes. He was a native of Floyd County, Va., and sixty-two years of age. Dr. Dickerson graduated from the University of the South, Medical Department, Sewanee, Tenn., in 1901. He had practiced medicine in Stuart, Va., for about thirty

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years. Dr. Dickerson had for several years been a member of the Medical Society of Virginia.

**Dr. William Andrews Lucas,**

Well known heart and lung specialist of Knoxville, Tenn., died June 20th of heart disease at the age of fifty-four. He was a native of Southwestern Virginia, and a graduate of the former University College of Medicine, Richmond, in 1901. Dr. Lucas went to Knoxville eight years ago. He served as a major in the medical division in France during the World War. Dr. Lucas had been a member of the Medical Society of Virginia for the past twenty years. His wife and a son survive him.

**Dr. Reid Arnold Rosser,**

Lynchburg, Va., died July 3rd, from injuries received when he fell from a third floor window of a hospital. He had been ill for sometime before his death. Dr. Rosser was fifty-nine years of age and a native of Rustburg, Va. He graduated from the former University College of Medicine, Richmond, in 1897, and had been a member of the Medical Society of Virginia for thirty-three years. Dr. Rosser was formerly located at Portsmouth, Va. His wife and two children survive him.

**Dr. James William Graham,**

Belfast Mills, Va., died July 16th, from gunshot wounds inflicted by a man living in that neighborhood, when Dr. Graham resented the fact that he had been struck by a rock which the man was throwing at a third party. Dr. Graham was fifty-five years of age and a graduate in medicine from Lincoln Memorial University, Knoxville, Tenn., in 1897. He was a member of the Russell County Medical Society. Dr. Graham is survived by his wife and two sons.

**Dr. William S. Keister,**

Towson, Md., former health officer of Prince Georges County, Md., and recently medical inspector of the Baltimore County Schools, died July 3rd, at Walter Reed Hospital, Washington, D. C., following an operation. He was forty-four years of age and the only son of Dr. and Mrs. B. C. Keister, of Washington, D. C. He was a graduate in medicine from Johns Hopkins University, Baltimore, in 1914, and had been in public health work over since his service in France during the World War. Dr. Keister was for a time connected with the Virginia Department of Health and was at one time professor of public health at the University of Virginia. His burial was made in Arlington National Cemetery, with military honors. Besides his parents, Dr. Keister is survived by his wife, two sons and a sister.

**Dr. John Osborn Polak,**

Brooklyn, N. Y., one of the leading obstetricians in this country, died suddenly of heart disease on June 29th. He was sixty-one years of age and graduated in medicine from the University of Vermont, College of Medicine, Burlington, and also from the Long Island College Hospital, Brooklyn, in 1891. He had long been a leader in the profession and held many positions of honor. He will be remembered by many of our members as having been a guest speaker at our meeting in Staunton, in 1924.

**Resolutions of the Richmond Academy of Medicine Upon the Death of Dr. Ennion G. Williams.**

WHEREAS, the Richmond Academy of Medicine has learned with profound regret of the death of their beloved and esteemed past president, Dr. Ennion G. Williams; therefore be it

RESOLVED, that the members of the Richmond Academy of Medicine feel that in the death of Dr. Ennion G. Williams the loss to the medical profession is not their's only, nor alone that of the State of Virginia, but that the whole country has lost a leader in preventive medicine. As a pioneer he pointed the way, as an executive he planned and obtained the means, and as a public servant he furnished the example of what should constitute an ideal health official. The reparation for this loss is that his labor is deathless in that he lives and will live in the health and in the life of those who are and those who are to come. Virginia is proud to point to him among her great and immortal sons. But those of us who lived close to him in this his home city had the advantage of watching his life unfold, a blessed privilege, and of knowing the qualities which raised him to his great achievements; therefore be it further

RESOLVED, that in the sorrow of his death we come to a realization of the legacy he has given us of an example of high endeavor, of gentleness of manner and of sweetness of spirit combined with the qualities of sustained labor and, when occasion demanded, of valorous combat. With the gallantry of Sir Philip Sidney, the sacrificial modesty of Walter Reed, the determination to conquer disease of Edward Jenner, and, when aroused, the battle inspiration of Stonewall Jackson, he went through life among us loved, admired and respected as one who fulfilled the two great commandments, loving his fellow man and fearing only God's displeasure. Be it further

RESOLVED, that these resolutions be spread upon the minutes of the Academy, that a copy be given the daily press and that a copy be sent to the family of Dr. Ennion G. Williams.

BEVERLEY R. TUCKER, *Chairman*,
A. L GRAY.
W. T. GRAHAM,
E. C. LEVY.
JAMES H. SMITH.